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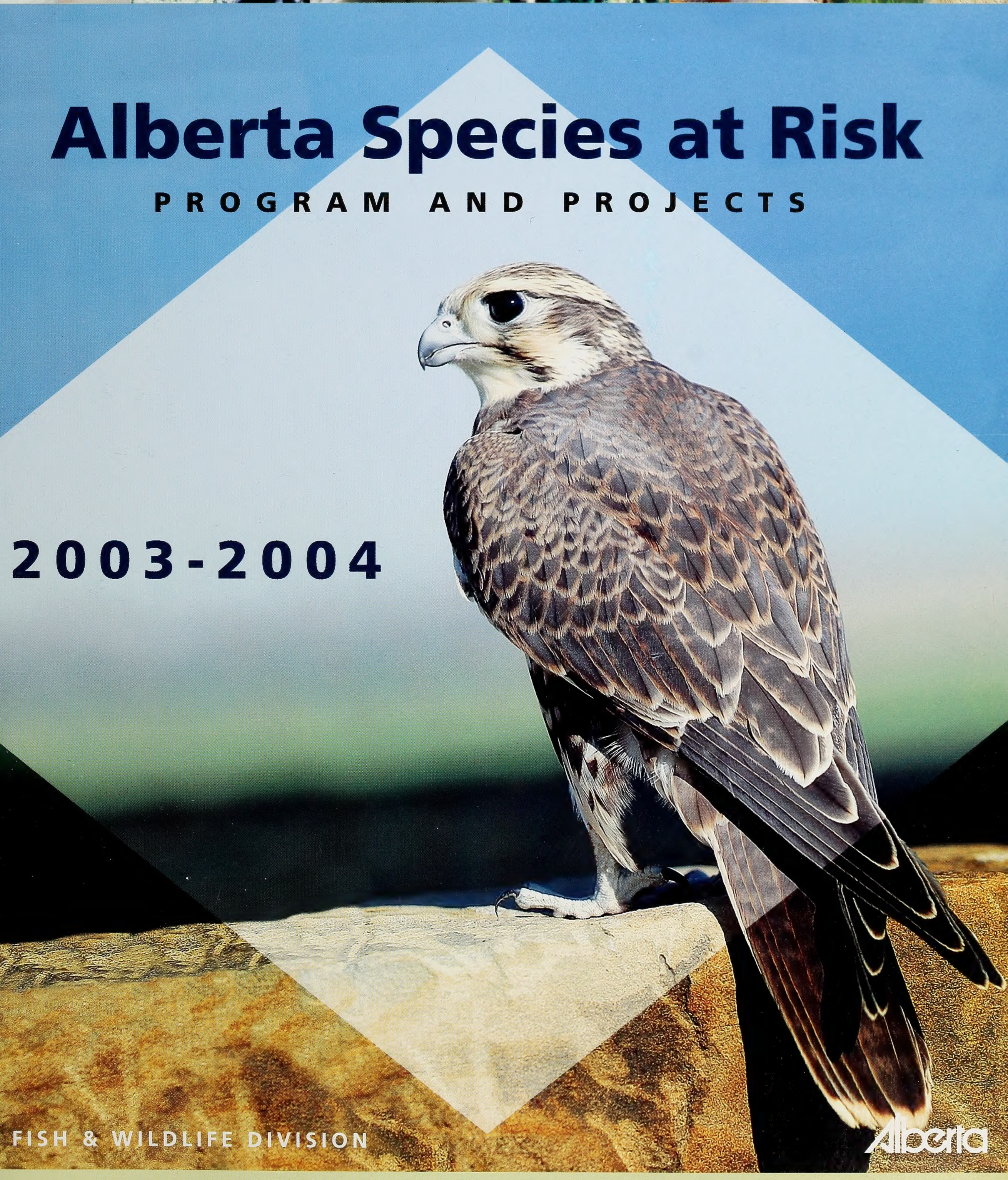
Alberta Species at Risk

PROGRAM AND PROJECTS



2003-2004

FISH & WILDLIFE DIVISION

Alberta

Alberta Species at Risk

PROGRAM AND PROJECTS

2003-2004

ALBERTA SPECIES AT RISK REPORT NO. 100

MAY 2005

Alberta

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table of contents

Acknowledgements | iv
Executive Summary | v
Introduction | 1
Map of Alberta | 6
List of Contacts | 7
Cooperating Agencies | 8

PROJECT SUMMARIES

Amphibians | *9*
Birds | *15*
Invertebrates | *23*
Mammals | *25*
Plants | *29*
Reptiles | *35*
Communication and Resource Tools | *37*
Multi-species and Landscape-level Projects | *38*

Conservation Management Planning | 43
Recovery Planning | 45
Recovery Implementation | 47
Literature Cited | 51
Related Sources | 52
Definition of Status Ranks | 53
Index by Target Species/Topic | 54
2000-2005 Species at Risk Report Titles | 55

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As in previous years, the success of the 2003-2004 Alberta Species at Risk Program is a result of committed involvement by permanent and summer staff with Sustainable Resource Development, volunteers, recovery team members, landowners, and consultants and contractors involved with numerous projects, recovery planning and other initiatives. In particular, the Fish and Wildlife Division would like to commend the dedication and enthusiasm of the following Species at Risk staff, regional fisheries and wildlife colleagues, and project collaborators. Their efforts have been instrumental in building and shaping the program, which continues to make significant advancements to the conservation and protection of species at risk in Alberta.

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Overall guidance and coordination of the 2003-2004 Species at Risk Program were provided by Steve Brechtel and Sue Cotterill.

executive summary

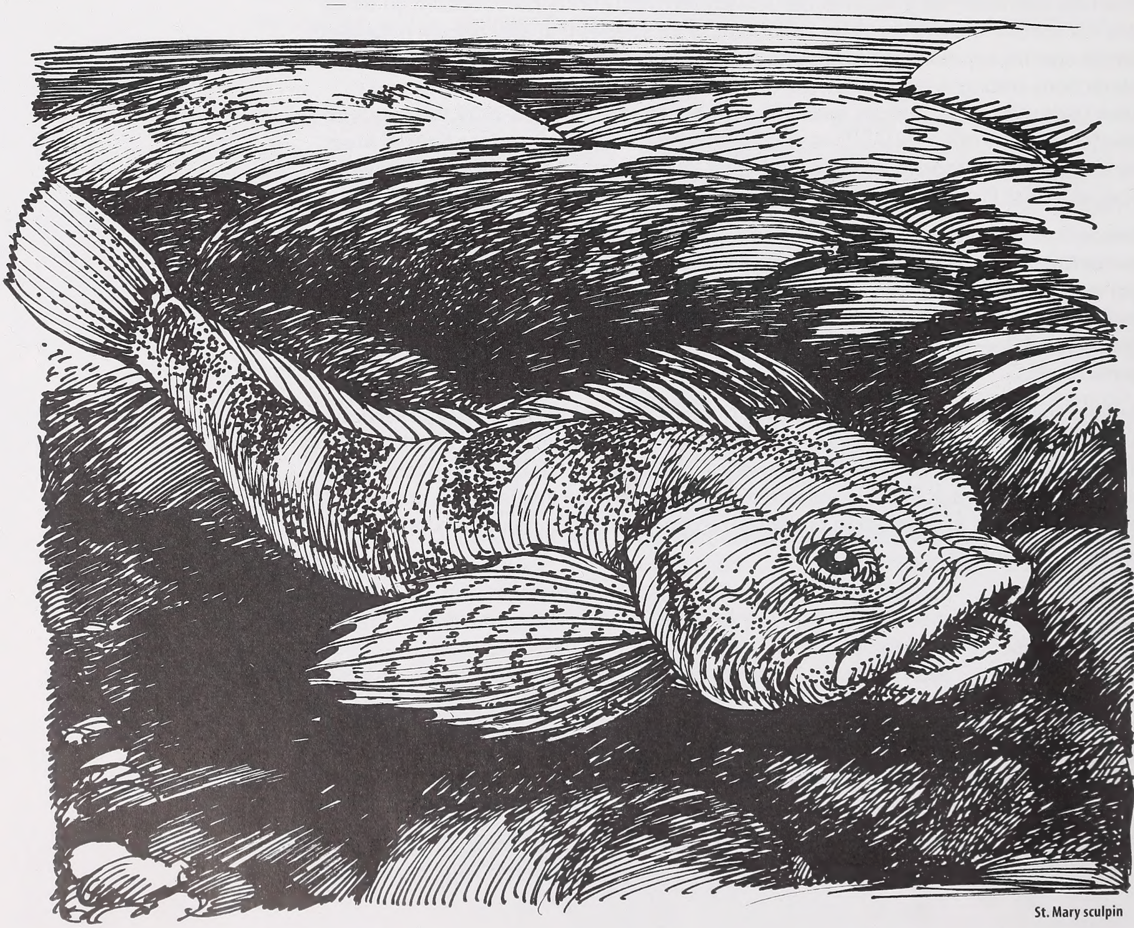
The Alberta Species at Risk Program continued to evolve in 2003-2004 (April 2003 – March 2004), shaped by recovery and conservation needs of species at risk in the province, and by external considerations, including the federal *Species at Risk Act.*

As in 2002-2003, emphasis was placed on recovery planning and implementation, and multi-species landscape-level initiatives. While status assessment continued to be integral to program function, the shift in focus from assessment to recovery represents a real need to identify and implement actions that will recover or maintain viable populations of at risk wildlife and plant species in Alberta. In 2003-2004, eleven provincial recovery teams were immersed in recovery planning for 14 species, and recovery programs for western blue flag and piping plover entered their second year of implementation.

Traditionally, species at risk initiatives, particularly recovery efforts, have focused on single species. For species where information is lacking, or for species that are critically imperilled, this single-species approach is appropriate. However, because ecosystem integrity depends on interactions among many species, it is often ecologically necessary as well as cost-effective to develop multi-species and landscape approaches. In 2003-2004, the Southern Headwaters at Risk Project (SHARP) was initiated, joining MULTISAR and the Special Areas Habitat Stewardship Program, as three landscape-level projects being spearheaded within the Species at Risk Program.

Involvement of affected and interested stakeholders has been integral to the success of the Species at Risk Program. Stakeholder participation in 2003-2004 was outstanding at the project level, on recovery teams, and with recovery activities. Engagement of stakeholders, through direct participation, partner funding or in-kind support in these areas, and through the Endangered Species Conservation Committee, continues to be a key strength of the program.

The federal *Species at Risk Act* was proclaimed in June 2003, and by June 2004 all sections of the act were in effect. The act continues to influence the delivery of species at risk initiatives in Alberta, particularly those related to recovery. Alberta in turn, has continued to influence the development of federal policies related to the interpretation and implementation of the act, and is committed to developing provincial recovery plans that meet both federal and provincial requirements.



St. Mary sculpin

introduction

This report is the fourth annual summary of the provincial Species at Risk Program and focuses on achievements and progress made during the 2003-2004 fiscal year (March 2003 – April 2004). The Species at Risk Program is coordinated by the Fish and Wildlife Division, Alberta Sustainable Resource Development. As in previous years, it is only through the cooperative efforts of many individuals, nongovernmental, provincial and federal agencies that the accomplishments of 2003-2004 have been realized.

In previous years the Species at Risk Program focused on inventory and monitoring projects, with recovery planning and implementation coming to the forefront during 2002-2003. In 2003-2004, provincial recovery planning and implementation again emerged as prominent components of the program, along with a new emphasis on multi-species and landscape-level approaches to species conservation.

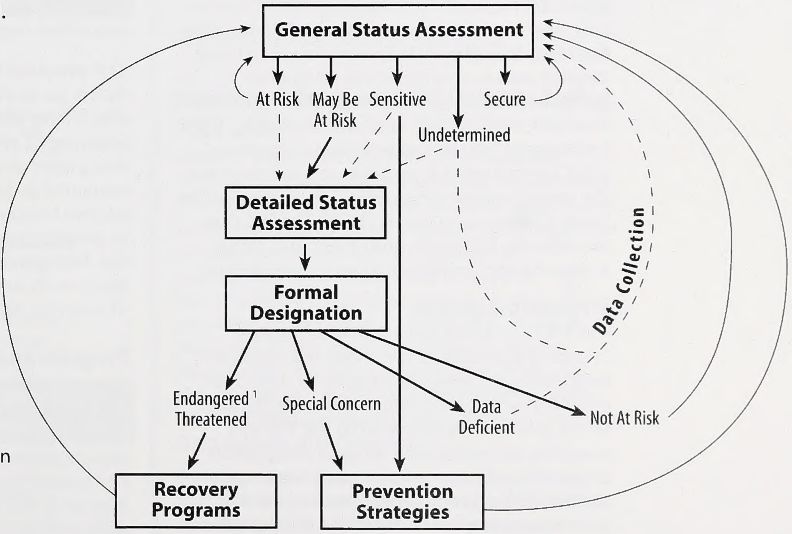
This document is intended to provide an overview of the projects and recovery efforts undertaken as part of the Species at Risk Program in 2003-2004, and to highlight staff commitment and volunteer and stakeholder involvement.

Program Framework

The Alberta Species at Risk Program is composed of five interrelated program areas:

- general status assessment of all wild species,
- detailed status assessment of species, with a focus on those that may be at risk of extinction or extirpation in Alberta,
- formal (legal) designation of species as *Endangered* or *Threatened*, or recommendation as *Species of Special Concern*, *Data Deficient* or *Not At Risk*,
- development and implementation of recovery programs for *Endangered* and *Threatened* species, and
- development and implementation of strategies to prevent species from becoming at risk, including *Species of Special Concern* management plans.

These components are integrated so that advancements in one area, for example general status determination, lead to the development and evaluation of the other components. Details on the five steps follow, and are illustrated in the accompanying figure 1.



¹ *Endangered* and *Threatened* are legal designations under Alberta's *Wildlife Act*

General Status Assessment

This element is the common link for all species included in the Alberta Species at Risk Program. The general status of wild species in Alberta, regardless of their designation, is evaluated every five years. This process acts as a coarse filter, identifying those species that require more focused attention, either for protection or accurate evaluation. In 2000, preliminary status assessments were prepared for 4735 species of plants, vertebrates, invertebrates and fungi, greatly expanding the scope of the general status assessment process. *The General Status of Alberta Wild Species 2000* (Alberta Sustainable Resource Development 2001) includes butterflies, orchids, ferns, fish, birds, mammals, amphibians and reptiles, all of which have also been assessed and reported on nationally. The 2005 assessment of the general status of wild species in Alberta will provide updated status evaluations for all species assessed in *The General Status of Alberta Wild Species 2000*, and in addition will report on the following species groups for the first time: additional vascular plant subgroups, odonates (dragonflies), bivalves (mussels and clams), and crayfish. These taxonomic groups will also be assessed and reported on nationally in 2005. Species that are assigned a general status of *Undetermined* become priorities for data collection to resolve their general status, and may feed into the detailed status assessment process described below.

2) Detailed Status Assessment

Detailed status reports, which provide a comprehensive and current summary of a species' status, are prepared or updated for select species that have received a general status of *At Risk*, *May Be At Risk*, *Sensitive* or *Undetermined*. Using these detailed status reports and any additional pertinent information, an independent body of scientists, the Scientific Subcommittee (SSC) of the Endangered Species Conservation Committee (ESCC), completes a formal status assessment for the target species using criteria developed by The World Conservation Union (IUCN). The SSC then provides the ESCC with both the formal status evaluation and conservation recommendations.

3) Formal Designation

The ESCC—a broad stakeholder committee including scientists, government and corporate land managers, resource-based land users and conservation organizations—evaluates detailed status assessments prepared by the SSC and makes recommendations on legal designation, preparation of recovery plans, and conservation actions. These recommendations and the SSC assessments are forwarded to the Minister of Sustainable Resource Development (the Minister), who has the final responsibility for legally designating species as *Endangered* or *Threatened*, and initiating recovery and conservation measures. Legal designation of birds, mammals, amphibians and reptiles as *Endangered* or *Threatened* under Alberta's *Wildlife Act* prohibits disturbance, killing, possession and trafficking of these species, and provides immediate protection for nests and dens. The *Wildlife Act* and associated *Wildlife Regulation* were modified in 1997 to enable the listing of fish, plants, invertebrates, algae and fungi as *Endangered* or *Threatened*. However, the automatic prohibitions do not apply to these taxonomic groups, and appropriate regulations need to be developed. For wildlife species that do not meet the criteria for *Endangered* or *Threatened* listing, non-legal categories including *Species of Special Concern, Data Deficient* and *Not At Risk* have been created.

4) Recovery Programs

Legally protected species are then addressed under the formal recovery planning process. The focus of a recovery program may be on recovery or maintenance of a species, depending on the particular circumstances leading to the species' listing. Ultimately, the intent of recovery planning is to improve the status of the species, ensure its long-term survival in the wild, and remove the species from the endangered/threatened species list. A recovery team, composed of a variety of stakeholders specific to the species and issues involved, is formed to develop a draft recovery plan as advice to the Minister on actions necessary to conserve the species or its habitat. Recovery teams also evaluate the progress of implementation of approved recovery plans. Following legal designation, recovery plans are required within one year for *Endangered* species and within two years for *Threatened* species.

5) Prevention Strategies

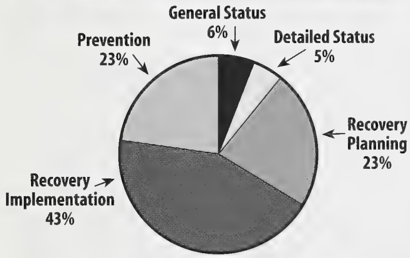
As it is generally much more efficient and cost-effective to protect species before they become *Endangered*, any species that has been formally designated as a *Species of Special Concern*, or evaluated as *Sensitive* at the general status level, is eligible for special management actions designed to prevent the species from becoming more at risk. Ecological management and conservation of biodiversity are considered fundamental aspects of program delivery.

Program and Project Priorities

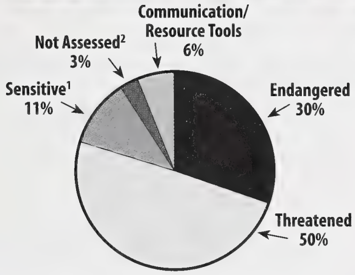
The 2003-2004 Species at Risk Program budget of $385 000 was allocated to species at risk projects, SSC and ESCC operations, and recovery planning and implementation. Salary and staff operational costs were covered from funds outside the Species at Risk Program. All project proposals were critically reviewed by Species at Risk staff and ranked using the following criteria: 1) the status of the target species; 2) existing commitments (e.g., ministerial priority, recovery planning and implementation, ongoing project requiring completion); and 3) the scope and impact of the proposed project (e.g., provincial vs. local scope; offering direct vs. indirect conservation benefits). Consideration was also given to ensure that progress would be made in all five program areas, from general status assessment to prevention.

Approximately $349 000 of the provincial Species at Risk Program budget was allocated directly to species at risk projects and recovery planning and implementation. The accompanying three charts show the breakdown of these project funds by program area, risk category and species' groups. Communication/resource tool initiatives appear as a stand-alone category in the species' groups and risk category charts.

Percentage of Project Funds Directed to Program Area



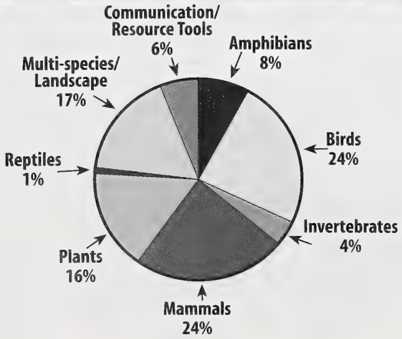
Percentage of Project Funds Directed to Risk Category



[1] Includes *Special Concern, May Be At Risk, Sensitive, Data Deficient*

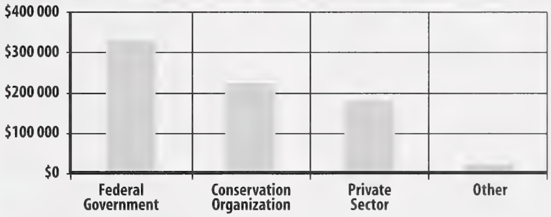
[2] Not Assessed – General Status ranks have not been finalized

Percentage of Project Funds Directed to Species' Group



Of the $349 000 in provincial funding that was allocated to species at risk projects and recovery efforts, over half of that amount (approximately $190 000) was directed to projects that the Fish and Wildlife Division coordinated, or co-led with other organizations, such as the Alberta Conservation Association. As in previous years, funding from outside sources played a significant role in the successful delivery of these initiatives. Partner funding was received from a variety of sources including the private sector, conservation or hunting-related agencies and the federal government. Partner funding totaled $763 000, and provided four times the Species at Risk Program allocation to jointly led projects. Many projects and all of the recovery efforts also benefited from extensive in-kind support from numerous organizations and individuals.

Partner Funding Contributed to 2002-2003 Species at Risk Projects[1]



[1] For projects led or co-led by the Fish and Wildlife Division

Significant Program Developments During 2003-2004

General status efforts in 2003-2004 included support of existing initiatives such as Researching Amphibian Numbers in Alberta, the central Alberta western and eared grebe inventory, and the central parkland survey of molluscs (bivalves and gastropods). The mollusc work focused on identification of gastropod species (snails and slugs), providing important new information for clarifying the status of many of these species in Alberta. Progress was made in preparing provincial and national general status assessments for odonates (dragonflies), bivalves (mussels and clams), and over 2000 vascular plant species.

Building on the general status exercise, detailed status reports initiated and printed in 2003-2004 covered species from a broad range of species' groups, including reptiles, birds, fish and plants. Reports were initiated for two *Sensitive* species (barred owl, Arctic grayling) and one species of *Undetermined* general status (sage thrasher). A fourth report was initiated for a plant species that had been assessed nationally, but not provincially (tiny cryptanthe). In addition, one update report was initiated (short-horned lizard) and new inventory data were collected to complete a preliminary report for slender mouse-ear-cress, which had also been assessed nationally. Four detailed status reports initiated in the previous fiscal year were printed in 2003-2004, bringing the total number of reports published in this series to 52 since 1997. The information in these reports will be used in the detailed status evaluation process. This element of the program continues to be integral to the operation of the SSC and ESCC.

The ESCC completed evaluations of 10 species potentially at risk in Alberta and forwarded its recommendations for these species to the Minister of Sustainable Resource Development (see table below).

Species reviewed by the Endangered Species Conservation Committee during 2003-2004

Species	Designation at Time of Assessment (2003)	Status Recommendation
Lake Sturgeon	Game Fish	Threatened
Western Silvery Minnow	Not Listed	Threatened
Shortjaw Cisco	Not Listed	Threatened
Prairie Falcon	Bird of Prey	Species of Special Concern
Bison	Endangered[1]	Endangered
Northern Leopard Frog	Threatened	Threatened
Small-flowered Sand-verbena	Not Listed	Threatened
Mountain Plover	Non-game Animal	Endangered
Banff Springs Snail	Not Listed	Endangered
St. Mary Sculpin	Not Listed	Threatened

[1] In identified area only

On the communications side, the second biennial report of the ESCC was completed and published in early 2004. The report was distributed to ESCC member organizations, provincial government offices, and various conservation organizations. Preparation of the third biennial report of the ESCC should be complete in early 2005. Other communication initiatives included continued efforts to enhance the Alberta Species at Risk web site (see below for site address) and documenting project progress through the Species at Risk Report series.

Important developments were made in provincial recovery planning and implementation in 2003-2004. Significant progress continued to be made in implementing recovery actions for western blue flag and piping plover, with both programs entering their second year of plan implementation. Recovery planning continued in 2003-2004 for burrowing owl, woodland caribou, grizzly bear, greater sage-grouse and peregrine falcon. In addition, five new multi-stakeholder recovery teams were initiated, including three with a single-species focus (trumpeter swan, Ord's kangaroo rat and western spiderwort) and two multi-species recovery teams, one for soapweed and yucca moth, and the other for three Milk River fish species (western silvery minnow, St. Mary sculpin and stonecat). Additionally, the Alberta Sage-Grouse Recovery Action Group agreed to initiate recovery planning for swift fox because of the overlap in the two species' ranges and conservation issues.

Stakeholder participation has been vital to the working success of the provincial recovery teams. Although stakeholder representation varies from team to team, conservation groups, industry, land users and managers, and provincial and federal agencies are generally involved in these cooperative and consultative initiatives. For more information about Alberta recovery teams and planning efforts, see page 45.

Advances were also made in the prevention component of the Species at Risk Program.

To date, draft conservation management plans have been developed for three *Species of Special Concern* – Sprague's pipit, long-toed salamander and long-billed curlew – and for one *Data Deficient* species, the prairie rattlesnake. Find out more about conservation management planning on page 43.

Raising public awareness about the identity and needs of species at risk also played a key role in the prevention aspect of the program. One of the key methods to achieve this is direct contact with the public, and species at risk staff continued to make progress in this area.

One of the biggest advances in the prevention field was the continued implementation of two multi-species landscape-level projects—the Multi-Species Conservation Strategy for Species At Risk in the Milk River Basin (MULTISAR) and the Habitat Stewardship Program for Species at Risk in Special Areas 2, 3 and 4 of Southeastern Alberta, and initiation of a third—the Southern Headwaters At Risk Project (SHARP). These initiatives are working toward conservation of species at risk found within a particular landscape, through voluntary stewardship actions with land users. Substantial progress has been made in identifying suitable habitat and priority areas for stewardship action for a number of species of management concern. In addition to addressing several species already listed as *Endangered* and *Threatened*, a number of species designated as *Special Concern* or *Data Deficient* are also targeted in these projects, along with several *May Be At Risk*, *Sensitive*, *Undetermined* and *Secure* species. For more information about Alberta's multi-species landscape-level projects, see page 38.

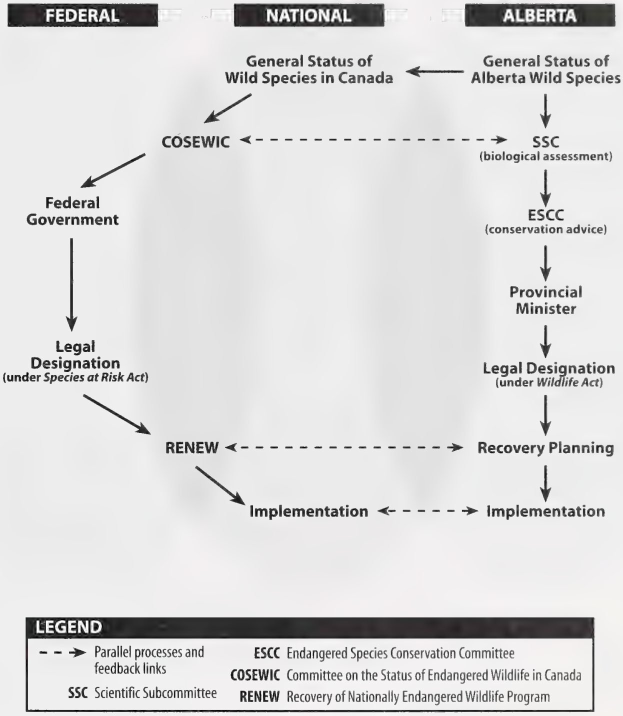
Provincial and National Program Integration

Alberta's approach to identifying and protecting species at risk is consistent with and parallels national efforts in this area (see figure below). Alberta has taken a leadership role in the development and implementation of a national general status assessment system, and this initiative links directly to Alberta's general status assessment effort. A standard assessment protocol has been adopted by all jurisdictions in Canada. This protocol consolidates the provincial and territorial status ranks of all wild species into national ranks at five-year intervals.

This consistency in approach continues at the detailed status assessment level. The SSC plays a role similar to that of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Both committees conduct biological assessments of species potentially at risk using criteria established by The World Conservation Union (IUCN).

The ESCC represents a unique and progressive component of Alberta's assessment process that is not found at the national level. By involving stakeholders at this stage of the legal designation process, the development of effective and viable management and recovery programs has been enhanced.

Integration of provincial and national recovery planning is essential, given requirements under the federal *Species at Risk Act* (SARA), for widely distributed species that face threats which are common across a number of jurisdictions. Where Alberta is the lead or co-lead jurisdiction for a federally listed *Endangered* or *Threatened* species (e.g., western silvery minnow), provincial recovery plans will be developed to satisfy both national and provincial requirements. Alberta also participates on most national recovery teams for federally listed species that occur in the province.


FEDERAL
NATIONAL
ALBERTA
General Status of Wild Species in Canada
General Status of Alberta Wild Species
COSEWIC
SSC (biological assessment)
Federal Government
ESCC (conservation advice)
Provincial Minister
Legal Designation (under Species at Risk Act)
Legal Designation (under Wildlife Act)
RENEW
Recovery Planning
Implementation
Implementation
LEGEND
Parallel processes and feedback links
SSC Scientific Subcommittee
ESCC Endangered Species Conservation Committee
COSEWIC Committee on the Status of Endangered Wildlife in Canada
RENEW Recovery of Nationally Endangered Wildlife Program

Future Direction

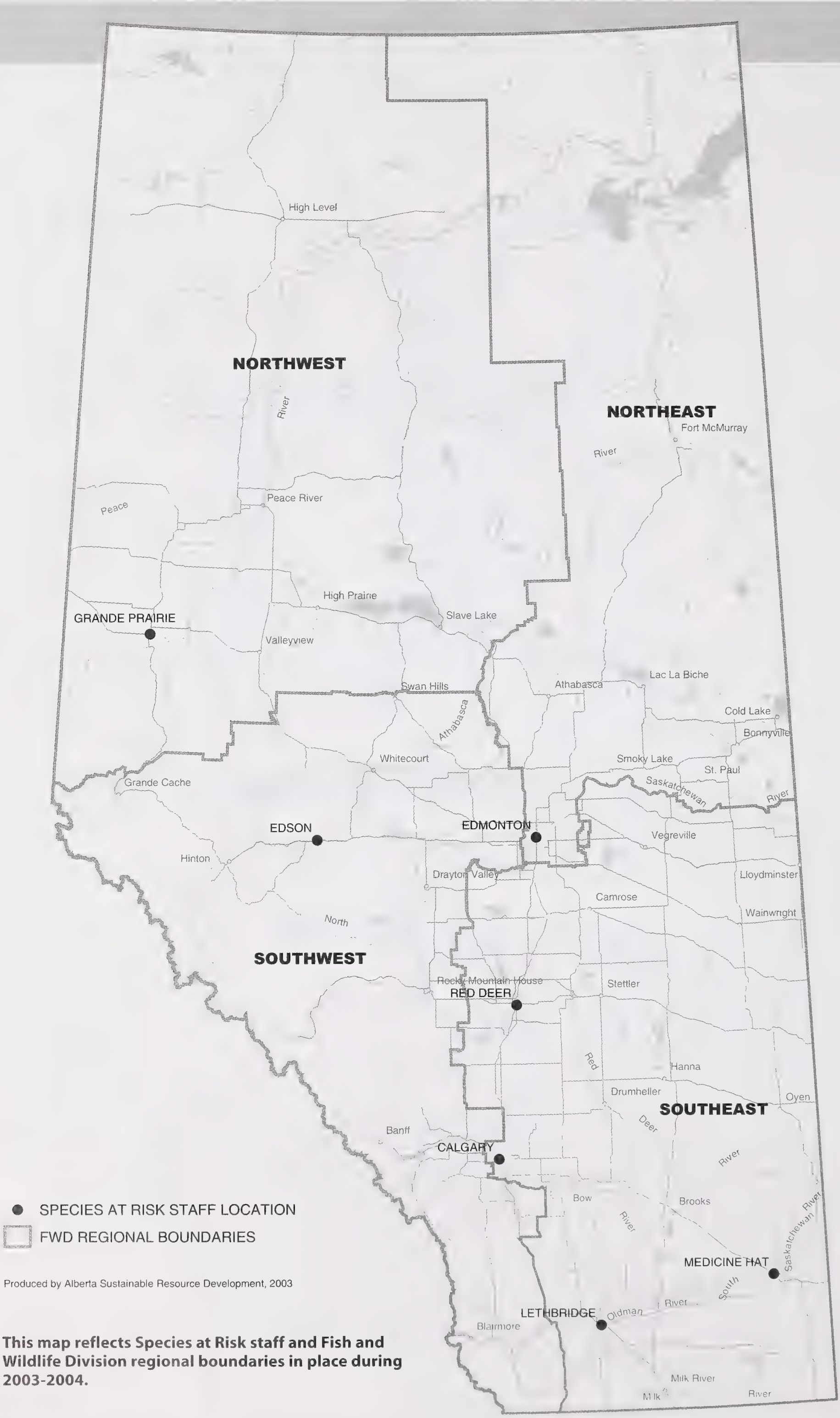
Fish and Wildlife Division staff and partners have continued to work together to create a progressive and responsive Species at Risk Program that includes strong stakeholder engagement. Building on this cooperative approach is critical for managing and conserving species and key habitats that occur on private and crown lands.

The 2004-2005 year will see the completion of many species' assessments in preparation for the publication of the 2005 general status of Alberta wild species report. The general status exercise will require the re-evaluation of all vertebrates, and initial work on new taxonomic groups will continue. In addition, several species (Weidemeyer's admiral, Porsild's bryum, westslope cutthroat trout, burrowing owl, western blue flag) have been identified as priorities for detailed status reports planned for 2004-2005. Another key challenge will be to address the requirements of the federal SARA, which, as of June 1, 2004, came fully into effect. Alberta will continue to pursue policy and related actions that will enable the province to meet or exceed SARA standards for areas of provincial jurisdiction.

Communication about the provincial Species at Risk Program to the public, nongovernmental agencies and other provincial and federal departments remains a priority. Opportunities for stakeholder involvement should be highlighted, and participation in conservation of species at risk, through implementation of approved recovery plans, stewardship initiatives or other activities, should be encouraged. As the number of species assessed under the provincial program continues to grow, recovery planning and implementation will remain as focal points of the program.

For more information about the Species at Risk Program, visit the web site: http://www3.gov.ab.ca/srd/fw/speciesatrisk/.

Fish and Wildlife Division | Administrative Regions and Location of Species at Risk Program Staff



Produced by Alberta Sustainable Resource Development, 2003

This map reflects Species at Risk staff and Fish and Wildlife Division regional boundaries in place during 2003-2004.

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Alberta Conservation Association
Alberta Energy
Alberta Energy and Utilities Board
Alberta Environment
Alberta Fish and Game Association
Alberta Forest Products Association
Alberta Grizzly Bear Recovery Team
Alberta Human Resources and Employment - Summer Temporary Employment Program (STEP)
Alberta Native Plant Council
Alberta Natural Heritage Information Centre
Alberta Newsprint Company
Alberta North American Waterfowl Management Plan
Alberta Ord's Kangaroo Rat Recovery Team
Alberta Pacific Forest Industries Ltd.
Alberta Peregrine Falcon Recovery Team
Alberta Piping Plover Recovery Team
Alberta Research Council
Alberta Sage Grouse Recovery Action Group
Alberta Soapweed/Yucca Moth Recovery Team
Alberta Sustainable Resource Development – Lethbridge Resource Information Unit
Alberta Sustainable Resource Development – Public Lands and Forests Division
Alberta Sustainable Resource Development – Raven Brood Trout Station,
Alberta Swift Fox Recovery Team
Alberta Trumpeter Swan Recovery Team
Alberta Western Blue Flag Maintenance and Recovery Team
Alberta Western Spiderwort Recovery Team
Alberta Wilderness Association
Alberta Woodland Caribou Recovery Team
Anatum Consultants
Baytex Energy
Boreal Caribou Committee
Burlington Resources Canada
Calgary Zoo
Canadian Association of Petroleum Producers
Canadian Forces Base Suffield
Canadian Forest Oils
Canadian Natural Resources Ltd.
Canadian Parks and Wilderness Society
Canadian Wildlife Service
CanFor
City of Lethbridge
ConocoPhillips Canada Resources Corporation
County of Grande Prairie
County of Warner
Devon Energy
Ducks Unlimited Canada
Duke Energy
Eastern Irrigation District
Elk Island National Park
EnCana Corporation
Endangered Species Recovery Fund
Environment Canada
Federation of Alberta Naturalists
Fisheries and Oceans Canada
Government of Canada Habitat Stewardship Program
Grizzly Bear Alliance
Highlands Pet Hospital
Human Resources Development Canada - Student Career Placement Program
Husky Energy
Kananaskis Field Station
Lethbridge Naturalists Society
Milk River Basin Water Management Committee
Milk River Fish Species at Risk Recovery Team
Milk River Ranchers Association
National Burrowing Owl Recovery Team
Nature Conservancy of Canada
Operation Grassland Community
Paradise Canyon Resort
Parks Canada
Petro-Canada
Police Outpost Provincial Park
Provincial Museum of Alberta
Red Deer River Naturalists
Runner's Soul
Shell Environmental Fund
Society for Range Management
Society of Grasslands Naturalists
Southern Alberta Environmental Group
Special Areas Board
Suffield Industry Range Control
Suncor Energy Inc.
Talisman Energy Inc.
TD Friends of the Environment Foundation
Tempest Energy
Trans-Canada Pipelines
The Trumpeter Swan Society
Town of Magrath
University of Alberta
University of Calgary
Volker Stevin Contracting Ltd.
Waterton Lakes National Park
Weldwood of Canada Ltd., Hinton Division
West Central Alberta Petroleum Producers Group
Western Stock Growers Association
Wood Buffalo National Park
Writing-on-Stone Provincial Park
Yellowstone to Yukon Conservation Initiative

Significant contributions were also received from numerous landowners and leaseholders, the ranching community, as well as the general public and private consultants.

PROVINCIAL GOVERNMENT DEPARTMENT NAMES REFLECT GOVERNMENT ORGANIZATION IN 2003-2004.

amphibians

PROVINCIAL LONG-TOED SALAMANDER MONITORING, 2003

Project Supervisor: **Lisa Wilkinson**

purpose

To continue monitoring long-toed salamanders to better understand range, population trends and habitat needs, and to implement education and conservation activities.

Background

Long-toed salamanders are primarily found in mountain passes and associated river valleys in western and northwestern Alberta. Long-toed salamanders have been approved by the Minister of Sustainable Resource Development as a *Species of Special Concern* in Alberta because of their vulnerability to habitat change and their isolated and limited distribution. Salamander populations should be monitored for a minimum of five years to understand population trends and identify necessary conservation and management activities.

As part of the Researching Amphibian Numbers in Alberta (RANA) program, monitoring for long-toed salamanders has been ongoing in the Bow Valley since 1998, in the Athabasca Valley since 2000, and limited monitoring has occurred in the Peace River area. In 2002, a new monitoring pond was established in the Bow Valley, as the primary monitoring pond consistently dried up.

Methods

In 2003, monitoring was conducted in the Athabasca Valley (Hinton area), Jasper National Park, and Bow Valley (Kananaskis area). Pond surveys were conducted at known breeding sites, primarily to search for eggs, but also for larvae and adults. New ponds were surveyed opportunistically. Pitfall traps were operated at one pond in each area to capture adults in early summer and to capture dispersing young-of-the-year in late summer. Trapping provides an opportunity to gather data on length, mass, sex, reproductive condition, occurrence of deformities, and provides a rough estimate of local relative abundance. Mark-recapture continued at the Athabasca (Hinton area) trapping pond. In the Athabasca Valley, efforts were made to determine if fish stocking had an effect on long-toed salamander populations.

Results

A total of 391 long-toed salamanders was captured in 2003. Although it appeared that breeding activity was healthy in both the Athabasca and Bow valley sites, there was a tenfold decline in the number of young-of-the-year at the Athabasca trapping pond, despite a record number of eggs. Unusually low water levels could have contributed to this decline. Only 14% of salamanders marked in 2002 were recaptured at the Athabasca trapping pond, which could indicate poor persistence of the marker. Modifications to the marking procedure were made in 2003, and results will be analyzed in 2004.

A total of 182 ponds was surveyed (other amphibian species were recorded in surveys), and new long-toed salamander breeding ponds were found in both areas. Relative to 2002, long-toed salamanders were recorded at 87% and 86% of ponds in Athabasca and Bow Valley, respectively. In addition, 29 ponds were surveyed in Jasper National Park and long-toed salamanders were observed at 13 of these. New observations were also reported in the Peace River area, extending the known range of the species in Alberta.

Investigations in the Bow Valley revealed that trout were generally not found in salamander breeding ponds. Although further investigation is required, this could reflect other studies that showed fish stocking is deleterious to salamander and other amphibian populations.

Recommendations/Future Direction

Long-toed salamander populations in Alberta appear to be persistent throughout most of their range, despite their vulnerability to habitat destruction, fish stocking, and human activity (particularly in the Bow Valley). Caution should be used in the interpretation of results because monitoring has occurred for a relatively short period of time. Continued monitoring, education and conservation are recommended, and it is essential to work with other land users to identify and protect critical breeding ponds.

REGION:
Provincial (conducted in Southwest, Northwest)

TARGET SPECIES:
Long-toed Salamander
(*Ambystoma macrodactylum*)

***WILDLIFE ACT* CATEGORY:**
Non-game Animal
(*ESCC Recommendation: Species of Special Concern*)

PROVINCIAL GENERAL STATUS:
Sensitive

COOPERATING AGENCIES

Alberta Community Development—Parks and Protected Areas Division, Alberta Conservation Association, Human Resources Development Canada—Student Career Placement Program, Kananaskis Field Station, Weldwood of Canada, Hinton Division

For more information contact:

Lisa Wilkinson (*see page 7*).

NORTHERN LEOPARD FROG REINTRODUCTION PROJECT

Project Supervisor: **Kris Kendell** (ACA)

REGION:
Provincial (conducted in Southeast, Southwest)

TARGET SPECIES:
Northern Leopard Frog (*Rana pipiens*)

***WILDLIFE ACT* CATEGORY:**
Threatened

PROVINCIAL GENERAL STATUS:
At Risk

purpose To re-establish leopard frog populations in the headwaters of the upper Red Deer River and North Saskatchewan River drainages and to increase public awareness of conservation issues facing the northern leopard frog.

Background

Once a common and widespread species throughout much of Canada, the northern leopard frog has declined or vanished from much of the western portion of its range. In Alberta, the decline resulted in a significant range contraction and reduction in population numbers, leaving the leopard frog absent from much of its northern and western range. The northern leopard frog was designated as *Threatened* under Alberta's *Wildlife Act* in 1997. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) lists the prairie population of the northern leopard frog as *Special Concern* (COSEWIC 2004).

The leopard frog has demonstrated little ability to naturally disperse back into the broader parts of its historic range because of large tracts of unsuitable habitat between existing populations. In 1998, the Fish and Wildlife Division began to explore the feasibility of reintroducing leopard frogs into formerly occupied habitats. The Fish and Wildlife Division and the Alberta Conservation Association initiated a reintroduction project at the Raven Brood Trout Station near Caroline, Alberta, that has been carried out since 1999.

Through the first five years of the northern leopard frog reintroduction program, nearly 12 000 leopard frogs have been captive-reared at the Raven Brood Trout Station and released into habitats within the historical range of the species.

Methods

In 2003, four leopard frog egg masses were collected, one from each of four different ponds in southern Alberta, and transported individually to the Raven Brood Trout Station. During the captive-rearing process, the water levels and potential predator threats were carefully monitored and managed when needed. Metamorphosed frogs were collected soon after the first completely transformed frogs were observed on the shore of the rearing ponds in noticeable numbers. The weight and snout-to-vent length (SVL) of every tenth frog captured for release into the wild was measured and recorded and each frog was also marked using a Visible Implant Elastomer (VIE) tagging system. The mark consisted of a fluorescent elastomer agent that was injected into the webbing between the fourth and fifth toe of the rear foot of each young frog. A specific color and foot was chosen to indicate the year of release of the frogs.

Frogs were then released at three sites: the Hummer Property (managed by Ducks Unlimited Canada) in the Central Parkland Natural Subregion; the upper headwaters of the Red Deer River near Caroline (Raven River); and a site located along the North Saskatchewan River near Rocky Mountain House. Leopard frog surveys were conducted throughout the spring and summer for evidence of survival of individuals that had been released in previous years, and breeding.

Results

In total, 7380 tadpoles were counted from the four egg masses collected in 2003. Of the 7380 living tadpoles introduced into the two rearing ponds, 2491 metamorphs were captured, marked and released, representing a survival rate of approximately 34%.

The release of frogs commenced shortly after complete metamorphosis. All 2491 frogs reared in 2003 were distributed and released at three predetermined release sites: Raven River (n=1196), North Saskatchewan River (n=795) and Ducks Unlimited Hummer Property (n=500).

Two female leopard frogs released in 2000 were captured during the 2003 field season. Both frogs were observed and captured within the rearing ponds at the Raven Brood Trout Station and subsequently released into a nearby pond upon capture. Three unconfirmed sightings of leopard frogs were also recorded in 2003 – all associated with the Caroline release site.

Public presentations and interpretative events featuring the reintroduction program as well as topics of amphibian ecology and conservation were conducted at the Raven Brood Trout Station.

Recommendations/Future Direction

The Endangered Species Conservation Committee (ESCC) recently re-evaluated the status of the northern leopard frog in Alberta and in January 2004 recommended to the Minister of Sustainable Resource Development that the species remain listed as *Threatened* under the *Wildlife Act*. In February 2004 the Minister endorsed the Committee's recommendations. Formal recovery planning will begin in 2004-05 with the formation of a provincial recovery team.

The recovery team will carry out a critical review of the core reintroduction program activities and reintroduction sites. Under this review, new partnerships and funding sources will be explored, and program components will be expanded or modified where needed to increase the scientific basis of the program and its effectiveness.

Future work may include the following: 1) a broad landscape stewardship approach to ensure that land use practices maintain or improve habitat that is critical to the survival of the leopard frog; 2) assessment of current leopard frog sites to determine if habitat improvements are necessary or required (e.g., mitigation, restoration, land management improvements, fencing, controlled grazing); 3) studying the genetic variation in leopard frog populations throughout Alberta; and 4) exploration of other means to obtain release stock for reintroduction.

COOPERATING AGENCIES

Alberta Conservation Association, Alberta North American Waterfowl Management Plan, Alberta Sustainable Resource Development—Raven Brood Trout Station, Calgary Zoo, Red Deer River Naturalists, Shell Environmental Fund, TD Friends of the Environment Foundation, local landowners, general public

For more information contact:

Dave Prescott *(see page 7)* or **Kris Kendell** (Kris.Kendell@gov.ab.ca) and see Species at Risk Report No. 78, Northern leopard frog reintroduction – year 4 (2002) and year 5 (2003).

The 2003 update of the northern leopard frog detailed status report is available at: http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

MAGRATH NORTHERN LEOPARD FROG REINTRODUCTION PROJECT

Project Supervisor: **Richard Quinlan**

REGION:
Southeast

TARGET SPECIES:
Northern Leopard Frog (*Rana pipiens*)

***WILDLIFE ACT* CATEGORY:**
Threatened

PROVINCIAL GENERAL STATUS:
At Risk

purpose To re-establish a breeding population of northern leopard frogs in formerly occupied native habitat in the area of Magrath, Alberta.

Background

The northern leopard frog was once abundant and widespread throughout central and southern Alberta, and was common in the Magrath natural areas around Pothole Creek. The northern leopard frog has vanished from much of its historical range, and in 1997 it was legally designated as *Threatened* under Alberta's *Wildlife Act* because of continued population decline. The few remaining breeding populations of leopard frogs are separated by large distances, making them vulnerable to disturbance and limiting their capacity to disperse into formerly occupied habitat. In 1999 the Fish and Wildlife Division and Alberta Conservation Association initiated a northern leopard frog reintroduction program. The reintroduction project in Magrath was set in motion by two local residents who made a request to Fish and Wildlife Division staff and the Alberta Conservation Association to see northern leopard frogs reintroduced into historic native habitat in the area.

Methods

Potential egg mass collection sites were searched in early May 2003. Two egg masses were collected from a pond in Medicine Hat that was potentially going to be destroyed later that summer. The egg masses were carefully transported and introduced into two rearing sites near Magrath, where they were placed in floating aquatic predator exclosures for the duration of the rearing period. The development of both egg masses was monitored every two days until hatchlings had developed into mobile tadpoles, at which time they were released directly into suitable habitat. All tadpoles were counted prior to release.

Post-release monitoring of northern leopard frogs commenced on 15 July, 2003. Initial monitoring took place at the release site. Later in the season, the Pothole Creek area became the primary focus for surveys in order to document dispersal distances. Walking transects were conducted within the study area every two to three days from late July into early September. From mid-September until the last week of October, surveys were carried out once a week when weather was appropriate for winter submergence.

Before and during the project, local news releases were issued. Residents were also informed of the project through occasional personal contact with the researcher during the field season. Ongoing communication and involvement was maintained with the two Magrath residents who requested the initiation of this project.

Results

The aquatic predator exclosures were effective at protecting the egg masses and developing tadpoles from aquatic, avian, and potential terrestrial predators. They allowed egg masses to be submerged just below the water surface, keeping the eggs in the warmest part of the water column, and promoting egg development. Water quality tests showed little difference between the collection site and two rearing sites.

Hatchlings were kept in the predator exclosures until of sufficient size and mobility to be released into the rearing ponds. Tadpole release took place in late May and early June for tadpoles from each of the two rearing sites.

In total, 5621 tadpoles were released at various locations along a pond known locally as Dudley's Pond, the first rearing site. Tadpoles reared in Pothole Creek were also released at Dudley's Pond for several reasons, including concern over the suitability of the Pothole Creek site for release.

The greatest number of frogs counted at the release pond was 197, on July 28. The size and developmental stage of the frogs were variable. It was apparent by early August that an increasing number of frogs had begun to disperse from the site. A search of the habitat adjacent to the pond both upstream and downstream along nearby Pothole Creek resulted in the observations of 25 frogs on August 7. The furthest upstream dispersal distance of 1.2 km was recorded on 2 October, 2003. The furthest downstream distance (northeast of the release site) recorded was 400 m, noted on 7 August, 2003. The last observation of northern leopard frogs in 2003 was on October 24.

Recommendations/Future Direction

Preliminary success of the reintroduction project will be achieved in spring 2004 if northern leopard frogs can be confirmed to have overwintered successfully. This can be assessed by monitoring the reintroduction area in spring 2004. Further success of the project will be determined once breeding becomes evident, and can be confirmed through the discovery of deposited egg masses. Call and egg surveys should be conducted in early spring of 2004 and 2005. Further recommendations include: collecting additional egg masses (from a different site than that used in 2003) for rearing; surveying for leopard frogs in the summer of 2004; evaluating overwintering habitat in the release area; investigating other potential release sites in southern Alberta; and continuing public awareness and education efforts. Overall success of the project can be considered once a long-term self-sustaining population of northern leopard frogs is established in the Pothole Creek area.

northern leopard frog

COOPERATING AGENCIES

Town of Magrath

For more information contact:

Richard Quinlan (*see page 7*) and see Species at Risk Report No. 79, Magrath northern leopard frog reintroduction project - year 1 progress report.

This report is available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

RESEARCHING AMPHIBIAN NUMBERS IN ALBERTA (RANA)

Project Supervisor: **Lisa Wilkinson**

REGION:
Provincial (conducted in Southwest, Southeast, Northwest, Northeast)

TARGET SPECIES:
All amphibian species found in Alberta

***WILDLIFE ACT* CATEGORY:**

Threatened: Northern Leopard Frog

Non-game Animals: Canadian Toad, Columbia Spotted Frog, Great Plains Toad, Long-toed Salamander, Plains Spadefoot

Non-Licence Animals: Western Toad, Boreal Chorus Frog, Tiger Salamander, Wood Frog

(*ESCC Recommendation—Species of Special Concern: Long-toed Salamander*)

(*ESCC Recommendation—Data Deficient: Canadian Toad, Great Plains Toad*)

PROVINCIAL GENERAL STATUS:

At Risk: Northern Leopard Frog

May Be At Risk: Canadian Toad, Great Plains Toad, Plains Spadefoot

Sensitive: Columbia Spotted Frog, Western Toad, Long-toed Salamander

Secure: Boreal Chorus Frog, Tiger Salamander, Wood Frog

COOPERATING AGENCIES

Alberta Community Development—Parks and Protected Areas Division, Alberta Conservation Association, Human Resources Development Canada—Student Career Placement Program, Kananaskis Field Station, Weldwood of Canada, Hinton Division

For more information contact:

Lisa Wilkinson (*see page 7*), and see Species at Risk Report No. 83, Researching Amphibian Numbers in Alberta (RANA): 2003 provincial summary.

This report is available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

purpose

To continue long-term monitoring of amphibian populations in the different biomes of the province, and to promote public education about amphibians and wetland conservation.

Background

Amphibian populations throughout the world are declining for various reasons, including loss of habitat. Amphibians are susceptible to small changes in their environment because of their permeable skin, and are consequently good indicators of ecosystem health. Long-term monitoring is needed to track changes in amphibian distribution and population trends. The Researching Amphibian Numbers in Alberta (RANA) program was initiated in 1997 to begin long-term monitoring and raise public awareness about the importance of amphibians and wetland habitat. Since its inception, the program has operated at seven sites distributed throughout the various biomes of Alberta. In 2003, monitoring occurred at six of those sites: Saskatoon Island Provincial Park, Lesser Slave Lake Provincial Park, Meanook Biological Field Station, Athabasca Valley (Hinton area), Bow Valley (Kananaskis area), and Cypress Hills Provincial Park.

Methods

In each RANA area, one pond is designated as the primary monitoring pond, where amphibians are captured with pitfall traps. Ponds are surrounded by silt fencing, and pitfall traps placed every 10 m along both sides of the fence. The fence intercepts amphibians traveling to and from the pond and directs them into the traps. Traps were checked regularly, and captured amphibians were identified to species, aged, measured, weighed, and released. A number of ponds within each RANA area were surveyed for evidence of breeding amphibians (eggs and larvae). Visiting the same pond each year helps determine persistence of populations. When possible, new areas were surveyed to contribute to knowledge of species' distribution.

Education initiatives included school talks and activities, interpretative talks and guided hikes at parks, newspaper articles, and displays.

Results

Amphibian species captured, in decreasing order of abundance, were the following: wood frogs, long-toed salamanders, boreal toads, boreal chorus frogs, northern leopard frogs, tiger salamanders, and Columbia spotted frogs. Of note were the highest wood frog numbers in the history of the RANA program, and the first captures of northern leopard frogs (capture success resulted from trap modifications in Cypress Hills).

In addition to pitfall trapping, 216 ponds were surveyed (excluding the Meanook site), with an additional 29 sites surveyed in Jasper National Park. Wood frogs were the most common species, found at 49% of all ponds surveyed. Long-toed salamander and Columbia spotted frog observations were restricted to the Athabasca and Bow valleys. In Cypress Hills, northern leopard frogs were found at 47% of all ponds surveyed. This frequency is an important result given the *Threatened* status of this frog species. The greatest number of amphibian species at a site (four) was found at ponds in the Athabasca Valley, Bow Valley, and Saskatoon Island sites. There was a notable absence of Canadian toad observations.

Educational activities reached approximately 6000 people.

Recommendations/Future Direction

Among the most obvious results reported from the RANA program are that amphibian populations fluctuate and they are strongly affected by environmental conditions. These points underscore the need to continue monitoring in order to detect potential declines. Continued monitoring at the RANA sites operated in 2003 is recommended. Increased efforts to study the Canadian toad are needed. Education activities should also continue, emphasizing the important role of amphibians and wetlands.

BURROWING OWL SURVEY AND MONITORING, HANNA AREA

Project Supervisor: **Arlen Todd**

purpose To determine the population status of the burrowing owl in the Hanna area.

REGION:
Provincial (conducted in the Southeast)

TARGET SPECIES:
Burrowing Owl (*Athene cunicularia*)

***WILDLIFE ACT* CATEGORY:**
Threatened

PROVINCIAL GENERAL STATUS:
At Risk

Background

The burrowing owl occurs in Alberta during the summer months, breeding throughout the Mixedgrass and Dry Mixedgrass natural subregions in the southeastern part of the province. The species inhabits treeless plains with sparse vegetation, and requires abandoned ground squirrel or badger excavations for nests and shelter.

Population surveys suggest that the Alberta population has declined by approximately 30% over a 10-year period. The breeding population in Alberta is currently estimated to be fewer than 800 pairs, compared with estimates of over 1500 pairs in 1978, and approximately 1000 pairs in 1990.

Although the exact causes of the population decline are unknown, possible causes include climate change, degradation and fragmentation of nesting habitat, use of pesticides, decreased availability of burrows because of reductions in burrowing mammal populations, and increased predator populations. Significant areas of suitable grassland habitat were rapidly converted to cultivated farmland almost two decades ago (from 1976-1986), but burrowing owls have continued to decline since then. In addition, the species is an obligate neotropical migrant, and may be affected by mortality factors or habitat alteration on its migration and winter ranges.

Methods

Surveys were repeated in the H-blocks (109 quarter sections), near Hanna, using a standardized protocol for burrowing owl call/response. All observations, including Global Positioning System locations and associated relevant information, were entered into the Biodiversity/Species Observation Database.

Results

A summary of key findings follows:

- 109 quarter sections were searched, including 8 new quarters to replace lands where access was denied.
- Zero (confirmed) nests were found within the blocks during the regular survey.
- Zero young were produced on the study area, although a nearby, off-study area nest fledged 4 young.
- Burrowing owls remain nearly extirpated in the Hanna area.

Recommendations/Future Direction

Surveys will be done in the Brooks (Kininvie) area in 2004. The trend blocks in the Hanna area will be revisited in 2005, at the earliest. Present inclinations are to survey the Hanna and Brooks areas in alternate years.

COOPERATING AGENCIES

Alberta Burrowing Owl Recovery Team, Eastern Irrigation District, National Burrowing Owl Recovery Team

For more information contact:

Arlen Todd (*see page* 7).

THE GREATER SAGE-GROUSE HABITAT STEWARDSHIP INITIATIVE AND RECOVERY EFFORTS

Project Supervisors: **Dale Eslinger, Paul Jones** (ACA), **Joel Nicholson**

REGION:
Provincial (conducted in Southeast)

TARGET SPECIES:
Greater Sage-grouse (*Centrocercus urophasianus*) and other prairie wildlife

***WILDLIFE ACT* CATEGORY:**
Endangered

PROVINCIAL GENERAL STATUS:
At Risk

purpose

To conserve and enhance the native prairie ecosystem of southeastern Alberta for the habitat conservation of greater sage-grouse and other prairie wildlife species.

Background

The native prairie ecosystem is the most threatened ecosystem in Alberta. Under the cumulative effects of urbanization, cultivation, livestock grazing, roads, and oil and gas development, the face of the native prairie has been altered dramatically. Changes in agricultural practices have resulted in a decline in grassland bird populations, with those birds remaining being concentrated on the native range. The native prairies of southeastern Alberta are of significant international importance, acting as breeding grounds and nesting habitat for both resident and migratory birds.

Greater sage-grouse is at the northern limit of its range in Alberta. Sagebrush, in particular silver sage, provides most of the diet of adult birds. Sage-grouse range is currently limited to the southeastern corner of the province, within the sagebrush community of the mixed grass prairie. The Alberta greater sage-grouse population has declined by 66%-92% over the last 30 years. Previous research in Alberta suggests that the population has declined as a result of poor recruitment. Low levels of recruitment appear to be linked to poor chick survival as a result of inadequate quality of brood rearing habitat. Numerous other factors have also been implicated as affecting the sage-grouse population, including most recently, West Nile virus.

The Sage-Grouse Habitat Stewardship Initiative uses land stewardship, by ranchers and farmers, as a tool to protect and enhance native prairie habitat. Its goals are to educate ranchers on the principles of sustainable rangeland management, and through the development of a multi-use plan, assist them in making informed decisions regarding grazing practices that will benefit their cattle operation, native prairie habitat, and wildlife. The program emphasizes an ecosystem approach, and the importance of range health that will provide benefits for many wildlife species. Where appropriate, special considerations are given to individual species.

Methods

A partnership between the Alberta Conservation Association (ACA), the Fish and Wildlife Division (FWD), and the Public Lands and Forests Division (PLFD) has been developed to use the land stewardship approach described above to target sage-grouse habitat in the southeastern corner of Alberta.

A local Recovery Action Group for sage-grouse has been formed, consisting of local stakeholders and agencies. This group will drive all future sage-grouse recovery actions, which will be integrated with the sage-grouse stewardship initiative. The team has conducted a number of meetings, and a locally based recovery action plan is being formulated. Successful plan implementation in the future by the committee will be key to the success of sage-grouse recovery and the sage-grouse habitat stewardship initiative.

Results

A number of important accomplishments have been achieved since the initiation of the stewardship program. The PLFD, in partnership with the sage-grouse habitat stewardship initiative, undertook an investigation into the ecological characteristics of silver sagebrush, completed an analysis of grazing history in southeastern Alberta, and also developed grazing management practices that are beneficial for sage-grouse. This work was published as a report entitled *Beneficial grazing management practices for sage-grouse (*Centrocercus urophasianus*) and ecology of silver sagebrush (*Artemisia cana*) in southeastern Alberta*. This publication is available on the PLFD website: http://www3.gov.ab.ca/srd/land/m_rm_monitoring.html.

Although grazing management has been a principle focus of stewardship efforts, local initiatives are now concentrating on cumulative effects of impediments to surface water flow, resulting from agricultural practices, cultivation and industrial development activities, and their potential impact on sage-grouse habitat. Mapping of important sagebrush landscapes has been completed for the entire range of the sage-grouse. An investigation into the effects of reduced surface water flow to support sagebrush communities has also been completed, and this information will be used in further habitat analysis and management. Work is also underway to look at the impacts of oil and gas development in the sage-grouse range, and to identify key habitats as conservation targets. All of this information will be used to produce models outlining essential sage-grouse habitat and the stresses on it. This modelling exercise, coordinated by the University of Calgary, combines the previous work of many projects, and should help direct stewardship and conservation actions on the landscape.

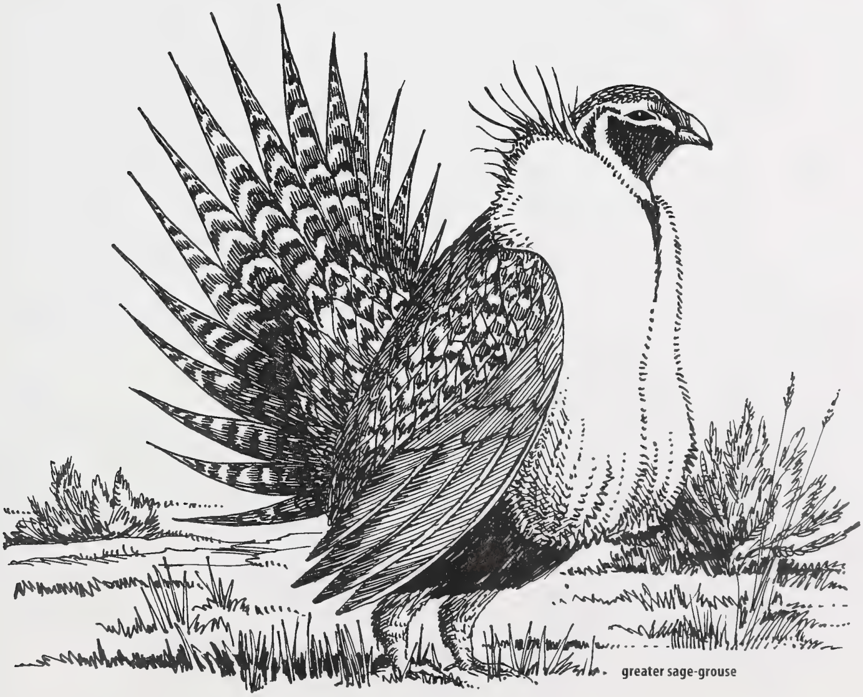
Obtaining involvement of landowners/leaseholders in the sage-grouse habitat stewardship program continues to be difficult. A number of projects that were initiated have not developed because of difficulties with the current economics of the cattle industry. However, two monitoring sites have been established and fenced as part of PLFD's Rangeland Benchmark Monitoring Program. The sites are located in predominantly silver sage grassland and will be used to document any changes in silver sage community over time. Additional projects are still being sought, and landowner contact is ongoing.

In order to assess work undertaken by the stewardship program, a partnership with the University of Alberta has been developed. Researchers will evaluate any grazing system changes and range improvements that are made to enhance sage-grouse habitat. Evaluation of changes to ranch grazing systems and the subsequent effect on prairie wildlife will be a key part of a successful and evolving program.

Recovery planning for sage-grouse is well underway, and the recovery team has been using a collaborative and adaptive management framework to guide the process. Completion of a locally based action-oriented recovery plan is expected by winter 2004.

Recommendations/Future Direction

Continued investigations into cumulative effects on the landscape and their effect on silver sagebrush and prairie wildlife are recommended. Cooperative management strategies based on developed best management practices should be implemented in co-operation with PLFD, ACA, local ranchers and the recovery action group. A long-term evaluation of management activities should be carried out to measure the overall success of the program.



greater sage-grouse

COOPERATING AGENCIES

Alberta Conservation Association, Alberta Sustainable Resource Development—Public Lands and Forests Division, Government of Canada Habitat Stewardship Program, University of Alberta, University of Calgary, local ranchers

For more information contact:

Dale Eslinger (Dale.Eslinger@gov.ab.ca), **Paul Jones** (Paul.Jones@gov.ab.ca) or **Joel Nicholson** (*see page 7*).

WINTER HABITAT SELECTION AND SURVIVAL OF GREATER SAGE-GROUSE IN SOUTHEASTERN ALBERTA, 2003

Project Supervisors: **Joel Nicholson, Paul Jones** (ACA)
Project Researcher: **Cameron Aldridge** (University of Alberta)

REGION:
Southeast

TARGET SPECIES:
Greater Sage-grouse
(*Centrocercus urophasianus*)

***WILDLIFE ACT* CATEGORY:**
Endangered

PROVINCIAL GENERAL STATUS:
At Risk

purpose

To gain an understanding of the winter ecology, habitat use and survival rate of greater sage-grouse in southeastern Alberta.

Background

Historically, greater sage-grouse occurred in British Columbia, Alberta, Saskatchewan and 16 U.S. states. However, they have since been extirpated from British Columbia and five states. Declines throughout the range are estimated at 45%-80% since the 1950s. Canadian populations have experienced the most severe declines, estimated at 66%-92% in Alberta over the last 30 years. Previous research in Alberta suggests that poor quality habitat has reduced survival, particularly that of chicks, yet very few studies have been conducted to assess the importance of winter habitat. Sage-grouse are dependent on sagebrush for food and shelter during the winter, and small changes to the quality or availability of winter habitat have been shown to cause drastic reductions in some sage-grouse population numbers. There have been no studies performed in southern Alberta to identify important sage-grouse winter habitat and determine whether winter habitat may be a limiting factor.

Methods

The study was initiated in 2002-03 and conducted in the southeastern corner of Alberta, south of the Cypress Hills. Sage-grouse were captured throughout the spring and summer and females and juveniles were fitted with radio transmitters as part of a separate summer habitat selection research program. These same radio-collared females were followed for the winter ecology research project. Collared birds were tracked from September through to the following breeding season (late March), enabling survival estimates to be generated and winter habitat use to be assessed. Once a week, microsite habitat measurements were performed at each use site as well as at paired random locations. These measurements included assessment of the dominant vegetation type and measurements of sagebrush, snow depth and condition, slope, aspect and temperature.

Resource Selection Functions (RSFs) will be used to develop habitat models to predict the distribution of sage-grouse at several different scales across the landscape. These models will enable the identification and mapping of important winter habitat, which will be used as a management tool to maintain or improve winter habitat for sage-grouse.

Results

During the first winter of the study (2002-03) 16 females were tracked and the overwinter survival rate for those individuals was 88%. In the second winter (2003-04), 15 adult and seven juvenile females were tracked. Eleven of the 15 adults (73%) and three of the seven juveniles (43%) survived through the winter into the spring of 2004.

Over the two-year study, 567 tracking relocations were obtained for a total of 34 females (combined adults and juveniles), and detailed vegetation measurements were collected at 422 winter use sites and 422 paired random locations. These data are being used to develop resource selection functions that will be used to identify, manage and enhance critical sage-grouse winter habitat in Alberta.

Recommendations/Future Direction

Sage-grouse followed in this study displayed distinct movements to wintering areas. These areas tend to be reused each year and may warrant protection. Conservation of these areas using appropriate protective notations or other management measures should be investigated and implemented.

Sage-grouse also appear to select for areas with greater sagebrush cover. Once completed, the winter habitat models will provide insight into winter habitat requirements and facilitate identification of key wintering habitat, potential habitat and population limitations. This information should then be used to more effectively protect and manage sage-grouse wintering habitat.

COOPERATING AGENCIES

Alberta Conservation Association, Endangered Species Recovery Fund, University of Alberta

For more information contact:

Joel Nicholson (*see page 7*) or
Paul Jones (Paul.Jones@gov.ab.ca).

ALBERTA LOGGERHEAD SHRIKE SURVEY, 2003

Project Supervisor: **David Prescott**

purpose

To estimate the size of the Alberta population of loggerhead shrike by taking part in an ongoing prairie-wide roadside survey for the species.

REGION:
Provincial (conducted in Southeast)

TARGET SPECIES:
Loggerhead Shrike (*Lanius ludovicianus*)

***WILDLIFE ACT* CATEGORY:**
Non-game Animal

(*ESCC Recommendation: Species of Special Concern*)

PROVINCIAL GENERAL STATUS:
Sensitive

Background

Populations of the loggerhead shrike have declined in recent years across most of North America. In Canada, the eastern subspecies (*L. l. migrans*) is now listed as an *Endangered* species under the federal *Species at Risk Act*, and the western populations (*L. l. exubitorides*) are considered to be *Threatened* (COSEWIC 2004). In Alberta, the loggerhead shrike has been approved as a *Species of Special Concern* by the Minister of Sustainable Resource Development. Populations in this province, as with many other jurisdictions, have declined since the 1950s, and recent estimates suggest that the provincial population is about 3000 pairs.

The management of all species at risk requires good knowledge of population size and trends. A variety of surveys have been conducted for the loggerhead shrike in Alberta over the past few years. Perhaps the most useful is the prairie-wide roadside survey conducted at five-year intervals since 1987 (the 1993 survey was not conducted in this province). Past surveys included approximately 10 000 km of road routes (approximately 3800 km of these were in Alberta), and provide valuable information on population trends and shifts in population density over time. These surveys have shown that populations in Alberta have increased over the past 15 years, since the 1987 survey, while decreasing substantially in Manitoba and remaining fairly constant in Saskatchewan.

In 2003, the prairie-wide population survey for loggerhead shrikes was repeated. The goal in Alberta was to increase coverage of roadside routes, and to collect additional information that would allow calculation of a population estimate for the province.

Methods

Surveys were conducted along roads within the range of the loggerhead shrike in Alberta. In previous surveys, two road routes were established in each of the eight, 1:250 000 map sheets for the southeastern part of the province, for a total of 3802 km of survey routes. For the 2003 survey, the same routes were maintained, and an additional two routes were placed in all map sheets, with the exception of sheet 72 L in the southeast corner of the province, where a lack of roads permitted the addition of only one route. The total distance covered by the 31 routes was 8095 km.

Surveys were conducted using identical methodology to that used in the previous four surveys. Observers drove routes at a speed of 50-70 km/hr between mid-June and mid-July, and recorded the presence of shrikes. Surveys were not conducted during inclement weather or temperatures >25°C. In Alberta, observers also determined the distance from the road to the shrike when first detected and then naïve observers were solicited to resurvey routes to determine detection probabilities. These metrics, along with GIS (Geographic Information System) analysis of the landscape, were used in the estimation of regional population size.

Results

A total of 19 observers from the Fish and Wildlife Division and the Alberta Conservation Association spent 174 hours surveying the 31 shrike routes. These observers sighted 169 shrikes at 144 unique sites, for a total of 1.78 indicated pairs/100 km of route. This value was 9.2% less than the 1.96 indicated pairs/100 km reported from the 1998 survey in Alberta. When only the same 16 routes surveyed in both years are considered, populations declined by 34.2% to 1.29 pair/100 km. There was a general reduction in numbers in the central parts of the province, with populations increasing in the Lethbridge and Medicine Hat areas, and also in the western parts of the Aspen Parkland.

Based on data gathered during this survey and recent research conducted by the Fish and Wildlife Division, approximately 86.8% of shrikes are detected within 100 m of roads, 26.1% of local shrike populations occur within 100 m of the road, and roadside surveys detect 34% of shrikes that are known to be present. This information, combined with knowledge that the survey routes constitute only 11.3% of the available roads within the study area, can be used to calculate a crude population estimate for Alberta of 13 560 pairs. This figure is substantially higher than previous estimates. However, given our increasing knowledge of the distribution and availability of shrike habitat in the province, we believe that this number is likely more realistic than previous estimates.

Recommendations/Future Direction

Our survey results indicate that although shrikes might be more numerous in Alberta than previously thought, populations have declined substantially since the 1998 survey. It is recommended that additional surveys be conducted to verify the current population estimate and to continue monitoring trends of this species in the province. Such surveys are important given that the loggerhead shrike is a *Species of Special Concern* and has a known susceptibility to West Nile virus, which has recently entered the province.

The prairie-wide survey results are being prepared for publication as a Canadian Wildlife Service Progress Note, and will be available in late 2004.

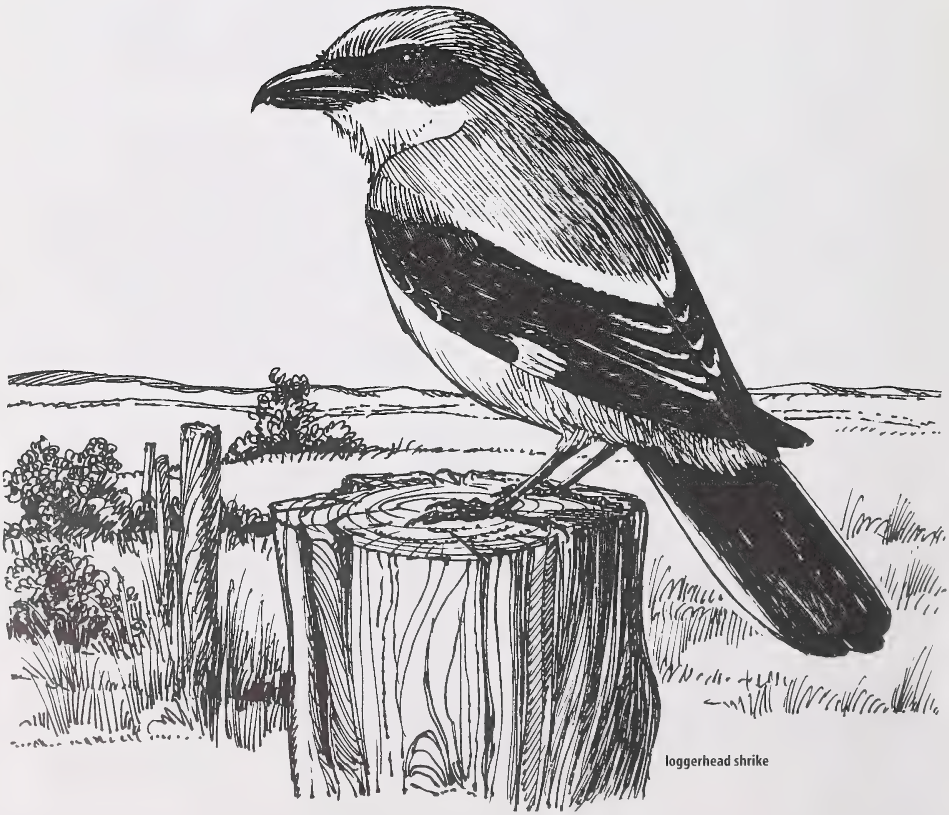
COOPERATING AGENCIES

Alberta Conservation Association

For more information contact:

Dave Prescott (*see page* 7) and see Species at Risk Report No. 93, The 2003 loggerhead shrike survey in Alberta.

This report is available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.



loggerhead shrike

MONITORING AND PRODUCTIVITY SURVEYS FOR THE PEREGRINE FALCON IN THE NORTHEAST AND CENTRAL REGIONS, 2003

Project Supervisors: **Rob Corrigan** (ACA), **Matt Besko, Dave Prescott**

purpose

To monitor the site occupancy, breeding success, and productivity of nesting peregrine falcons in northeastern and central Alberta.

REGION:
Provincial (conducted in Northeast, Southeast)

TARGET SPECIES:
Peregrine Falcon (*Falco peregrinus*)

***WILDLIFE ACT* CATEGORY:**
Threatened

PROVINCIAL GENERAL STATUS:
At Risk

Background

Historically, the peregrine falcon nested on the cliffs of most major river systems in the province. In the 1950s and 1960s the species exhibited global declines as a result of the indiscriminate use of organochlorine pesticides, most notably DDT. Intensive management of peregrine falcons has occurred since the mid-1970s and has resulted in expansion and increased productivity in both the northern and southern populations.

From 1970 to 2000 provincial surveys were conducted at five-year intervals in Alberta as part of continued monitoring and management efforts. From 1990 to 2000, the number of occupied territories increased from eight to 25 known in northern Alberta, and from three to 23 in southern Alberta.

For logistical reasons, the northern population was divided into four study areas: Fort Chipewyan, Peace Point, Fort Smith and the Canadian Shield. Because of the expense and difficulty in accessing the Canadian Shield sites, this study area was not considered for annual monitoring. Wood Buffalo National Park (WBNP) assumed responsibility for Fort Smith and Peace Point monitoring, and WBNP and the Fish and Wildlife Division (FWD) cooperatively monitored the Fort Chipewyan study area. The Alberta Conservation Association (ACA) and the FWD co-coordinated annual monitoring of the core portion of the species' range in the southern part of the province (central parkland region).

Methods

Within the Fort Chipewyan and parkland study areas, all suitable nesting locations were identified through historical nesting records. Unoccupied nests were checked more than once to confirm that there were no nesting birds present. Occupied cliffs were monitored for productivity throughout the breeding cycle to determine egg laying, hatching and fledging success. The timing of nest events was estimated by observing adult behaviour (e.g., incubating females, delivering food to the nest). Young that were observed at 25 days of age were considered to have fledged. Although fledging does not occur until 35-40 days, it is often difficult to determine fledging success if the young have flown prior to the site visit. During the final site visit, young falcons were banded with a United States Fish and Wildlife aluminum band (right leg) and a black alpha-numeric band (left leg). All information obtained was entered into the Biodiversity/Species Observation Database.

Results

In the Fort Chipewyan study area territorial pairs occupied seven sites in 2003, all of which produced fledged young. Thirteen young were confirmed fledged in 2003, resulting in an average of 1.86 fledged young per territorial pair. The number of young fledged in 2003 represents an increase from 2002 when there were also seven sites that produced fledged young but with an average of 1.25 fledged young per territorial pair.

Ten occupied territories were observed in the central Alberta study area during the 2003 breeding season, with breeding pairs present at nine of the 10 sites. Seven of the breeding pairs were productive and successful in fledging a total of 19 young. Five of the 19 young were banded. Reproductive success in 2003 was estimated as 2.11 fledglings per territorial pair, compared to 1.36 per territorial pair in 2002.

Recommendations/Future Direction

By continuing to monitor these study areas, managers will be able to detect any trends in occupancy or productivity that may be of concern for this species. Annual monitoring of the three study areas will detect any dramatic shift in population size and productivity without the associated cost of a complete regional survey. Relying on the national survey every five years to monitor occupancy and productivity does not provide an accurate assessment of the population. Peregrine productivity can fluctuate dramatically from year to year because of events that the five-year survey would not detect (e.g., severe weather); therefore, annual monitoring is necessary to detect whether a significant trend is developing. Annual monitoring will occur through the 2005 breeding season, and the need for continued monitoring will be assessed following the 2005 national survey.

COOPERATING AGENCIES

Alberta Conservation Association, Canadian Wildlife Service, Wood Buffalo National Park

For more information contact:

Matt Besko, Dave Prescott (*see page 7*), or **Rob Corrigan** (Rob.Corrigan@gov.ab.ca)

WESTERN AND EARED GREBE MONITORING IN CENTRAL ALBERTA, 2003

Project Supervisors: **Lisa Wilkinson, Hugh Wollis**

REGION:
Southwest

TARGET SPECIES:
Western Grebe (*Aechmorphorus occidentalis*), Eared Grebe (*Podiceps nigricollis*)

***WILDLIFE ACT* CATEGORY:**
Non-game Animals

PROVINCIAL GENERAL STATUS:
Sensitive: Western Grebe

Secure: Eared Grebe

purpose To continue monitoring western and eared grebe colonies to better assess the status of each species; to determine habitat needs and population trends; and to provide direction for conservation and management. Western grebes are the priority species because of their *Sensitive* status.

Background

Western and eared grebes are colonially nesting water birds that build precarious floating nests of aquatic vegetation. Although both species are distributed across western and central North America, there is little information available on grebe colonies in Alberta. It is suspected that they are sensitive to human activity and development, and that critical nesting habitat (i.e., reed beds) is disappearing.

The study was designed to fill information gaps, initiate a monitoring program, evaluate potential risks to colonies and provide direction for conservation and management. The study was also considered a pilot monitoring program, to be initiated in other parts of Alberta once survey protocols were established. The study was initiated in 2001 and monitoring has continued in 2002 and 2003, with emphasis on western grebes.

Methods

At the three western grebe colonies, post-nesting surveys were conducted to count nests as an index of the breeding population size. Additional lakes were surveyed to investigate western grebe observations, and to confirm eared grebe colonies and estimate the number of nests. The majority of western grebe colony surveys were conducted using waders, whereas some surveys were conducted by boat and occasionally done from shore using a telescope.

Results

Nest surveys of the three known western grebe colonies revealed 1277 nests, with an estimated adult population of 2554, which is similar to the last two years. The Lac Ste. Anne colony appeared to have increased, while the Isle Lake and Wabamun Lake colonies appeared to have decreased in size. No new colonies were found.

Eared grebe colonies were found on six of 12 lakes surveyed. The estimated population of 1905 adults was considerably lower than the previous two years. Eared grebe colonies tend to be less stable than western grebe colonies.

Both western and eared grebes appear to avoid areas of high human use, and western grebes in particular are reliant on reed habitat for nest building. This habitat is being removed for residential and harbour developments, and the existing western grebe colonies are currently located in the only remaining suitable habitat.

Recommendations/Future Direction

Although it is important to monitor the grebe colonies for a minimum of five years to understand population trends, it is equally important to work with landowners and developers to minimize disturbance to these critical grebe colonies. Future work will continue to incorporate public education with monitoring, and will expand this project into other parts of the province to improve the understanding of western grebes and provide direction for conservation and management.

COOPERATING AGENCIES

Alberta Conservation Association, Alberta North American Waterfowl Management Plan

For more information contact:

Lisa Wilkinson (*see page 7*).

SURVEY OF AQUATIC MOLLUSCS IN ALBERTA'S CENTRAL PARKLAND NATURAL SUBREGION

Project Supervisor: **Dave Prescott**

REGION:
Southeast

TARGET SPECIES:
Aquatic gastropods and bivalves

***WILDLIFE ACT* CATEGORY:**
None

PROVINCIAL GENERAL STATUS:
In Preparation

purpose

To establish the distribution and relative abundance of many species of aquatic molluscs in Alberta's Central Parkland Natural Subregion and thereby clarify the general status of many of these species.

Background

One group of organisms that has been largely overlooked in Alberta is the aquatic molluscs (bivalves and gastropods). Both bivalves and gastropods are widely distributed and relatively common in a variety of still and flowing wetland types in the province. Molluscs are important components of aquatic systems and are important food for many semi-aquatic and terrestrial organisms, including waterfowl. They are also intermediate hosts of a variety of fish and waterfowl parasites. In addition, many gastropods are filter feeders, and can concentrate toxic substances. This characteristic, along with their sensitivity to hydrological regimes (oxygen, nutrients, temperatures, etc.), makes them excellent bio-indicators of environmental health in landscapes influenced by activities such as pulp mills, irrigation and hydroelectric dams, deforestation, and agriculture.

Despite their importance in wetland systems, the only significant work on aquatic molluscs in Alberta has been by Clarke (1973), who collected at 87 sites in the province during the 1960s. As a result of that work, approximately 28 species of bivalves and 50 species of aquatic gastropods are known to occur in the province. Many of these species are only known from a very few sites, which reflects both the patchy distributions of many of these species, and incomplete sampling effort. Current understanding for most species is too limited to accurately determine their range, habitat requirements and biological status. The uncertain status of many species was highlighted during the preparation of preliminary general status ranks for molluscs in the province. That synthesis concluded that 20 of 77 species (26%) of gastropods and bivalves were of *Undetermined* status because of poor information (Clifford 2001, Lepitzki 2001). Of those that could be classified, a relatively high proportion (51%) was assigned a preliminary status designation of *Sensitive* or *May Be At Risk*.

This project consists of a large-scale inventory of aquatic molluscs from a wide variety of water bodies in the Central Parkland Natural Subregion of Alberta. The work will be only the second effort to characterize aquatic mollusc populations over a large geographical area of Alberta, and will build on previous work by Clarke in the early 1960s. The ultimate goal is to clarify the biological status of many species that are currently classified as being of *Undetermined* status in the province. This clarification will allow wetland managers to pay particular attention to species that are at high risk of extirpation in Alberta, that have unique or narrow habitat requirements, or that are highly sensitive to human activities.

Methods

During the summer of 2001, a variety of techniques were used to sample molluscs in rivers, streams, lakes and ponds across the entire Central Parkland Natural Subregion. Information was also collected on water chemistry at each site.

Mollusc samples were cleaned, stored in 70% ethanol, and returned to the lab for later analysis. Bivalves (clams) were separated from gastropods (snails) and were stored for future analysis. For the gastropods, a dichotomous key and a reference collection were developed to aid in identification. The number of individuals of each species in a sample were counted, and classified as "rare" (1 individual), "uncommon" (2-10), "common" (11-100) or "abundant" (>100).

Results

Collections were completed at 197 sites across the subregion. In 2003-04, analysis of specimens was completed. In total, 31 938 identifiable gastropod specimens were retrieved from 180 sites (17 highly alkaline lakes contained no molluscs). Thirty-two separate species or recognizable subspecies were identified, which represents almost all of the gastropod taxa determined by Clarke (1981) and Lepitzki (2001) to occur in the region. Three ridge valvata (*Valvata tricarinata*) was the most abundant species, whereas flexed gyro (*Gyraulus deflectus*) and tadpole physa (*Physella gyrina*) were found at the greatest proportion of sites sampled. Two new species for Alberta were discovered: fragile ancylid (*Ferrissia fragils*) and bellmouth rams-horn (*Planorbella campanulata*), both of which were found at single locations within 15 km of Edmonton.

Recommendations/Future Direction

A complete report on the aquatic gastropod study was completed in 2004. The information collected on abundance and distribution, combined with data on habitat use (wetland type and size, water chemistry) of gastropods will provide exciting new information for clarifying the status of many of these species in Alberta. Once this work is complete, attempts will be made to secure resources to begin analysis of the bivalve specimens.

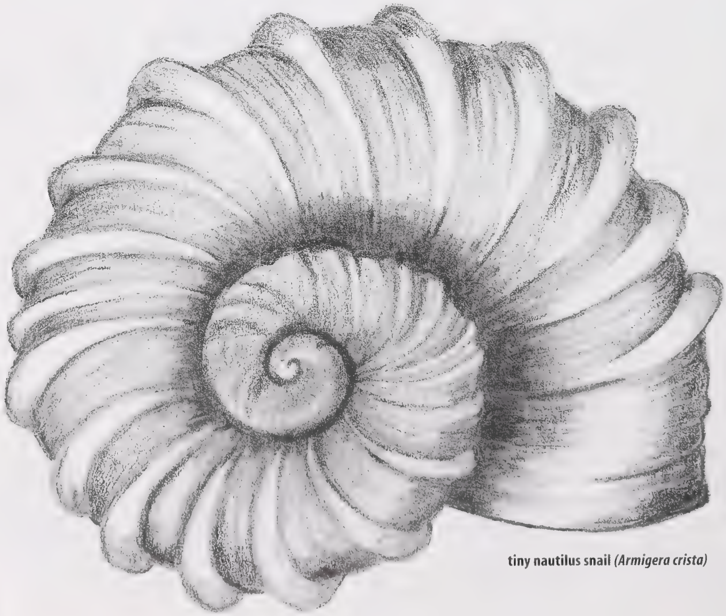
COOPERATING AGENCIES

Alberta Conservation Association

For more information contact:

Dave Prescott (*see page* 7) and see Species at Risk Report No. 92, Survey of aquatic gastropods in the central parkland subregion of Alberta.

This report is available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.



tiny nautilus snail ***(Armigera crista)***

(illustration courtesy of M.Curteanu)

WOODLAND CARIBOU CALF SURVEYS

Project Supervisor: **Dave Hervieux**

REGION:
Provincial (conducted in Northwest, Northeast)

TARGET SPECIES:
Woodland Caribou (*Rangifer tarandus caribou*)

***WILDLIFE ACT* CATEGORY:**
Threatened

PROVINCIAL GENERAL STATUS:
At Risk

purpose

To determine woodland caribou population trends through annual aerial surveys.

Background

Woodland caribou occur at low densities and in clumped distributions, are cryptically coloured, and inhabit coniferous forests during the winter. These factors combine to make woodland caribou a difficult species to census. Long-term population trends are unknown; however, recent population studies suggest that most populations are declining.

Several woodland caribou populations are being studied as part of the Boreal Caribou Committee (BCC) and West Central Alberta Caribou Standing Committee research programs. Through these initiatives, large numbers of female caribou have been radio-collared to collect information on recruitment, survival and mortality. These data are the only means currently available to track population trends and compare areas with varying degrees of industrial development. Some of these caribou populations are experiencing considerable amounts of disturbance from industrial activities. Aerial surveys are the key method of determining herd status.

Methods

The BCC is monitoring eight different ranges in northern Alberta: west side of the Athabasca River [WSAR], east side of the Athabasca River [ESAR], Caribou Mountains, Red Earth, Cold Lake Air Weapons Range [CLAWR] – Alberta and Saskatchewan sides, Chinchaga and Slave Lake.

Aerial surveys were conducted in February and March to determine calf recruitment in all major caribou ranges under study in 2004, except in the CLAWR. Calf survival to one year of age (recruitment) is determined by late winter helicopter surveys. Groups of caribou are located using radio-collared cows and all caribou within the group are surveyed and classified by age (adult versus calf), and the sex of adults is determined. The general condition of all caribou observed is assessed. Information from the spring calf survey is used with adult survival data to determine the rate of population change.

Results

Results of the 2004 calf recruitment surveys are presented along with survey results from the previous ten years in Table 1. In March, calves are only about 10 months of age, so the values from calf surveys represent an optimistic view of recruitment. The average values presented in the table represent average calf recruitment per range from the inception of the surveys in that range, up to and including 2003.

Spring 2004 calf recruitment rates in WSAR, ESAR and Red Earth were lower than the multi-year average recruitment rates for those ranges, although similar to annual estimates across the previous three or four years, respectively. Recruitment in the Caribou Mountains and Chinchaga in 2004 is similar to the average rates for those ranges, whereas in Slave Lake the 2004 estimate is greater than the short-term average for that area. It is important to note that between-year variation in calf recruitment varies greatly for a number of the monitored ranges.

Table 1. Calf recruitment in Boreal Caribou Committee study areas (calves per 100 cows)

Study Area	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Ave	2004
WSAR	28	22	20	29	36	26	18	17	15	18	**23**	16
ESAR	10	22	20	15	N/S	37	28	11	18	17	**20**	16
Red Earth		9	25	18	46	15	12	16	7	19	**19**	12
Caribou Mtn		11	16	24	10	12	7	6	20	24	**14**	13
CLAWR AB						19	14	6	10	N/S	**12**	N/S
CLAWR SK						32	19	13	28	N/S	**23**	N/S
Chinchaga									35	11	**23**	22
Slave Lake									52	19	**36**	43

Recommendations/Future Direction

Woodland caribou have been designated as *Endangered* animals (subcategory *Threatened)* under the provincial *Wildlife Act* since 1987 and a tremendous amount of time and resources have been invested into examining survival and recruitment, habitat use, and limiting factors within caribou ranges. Short- and long-term population trends are the only definitive tools available to judge the success of mitigation efforts that are undertaken relative to industrial land uses. To date, declining caribou populations in many of the Alberta ranges indicate that caribou populations still face significant issues. It is critically important that monitoring of population trends, of which calf recruitment surveys are a major component, continues on an annual basis. This monitoring should continue until wildlife managers are satisfied that caribou populations and habitat suitability and supply are being maintained.

COOPERATING AGENCIES

None

For more information contact:

Dave Hervieux
(Dave.Hervieux@gov.ab.ca).

woodland caribou

WOODLAND CARIBOU RANGE RESTORATION PROJECT, 2003-2004

Project Supervisor: **Matt Besko**

REGION:
Provincial (conducted in Northeast, Northwest, Southwest)

TARGET SPECIES:
Woodland Caribou (*Rangifer tarandus caribou*)

***WILDLIFE ACT* CATEGORY:**
Threatened

PROVINCIAL GENERAL STATUS:
At Risk

purpose

To speed the recovery of linear disturbances (roads, seismic lines and pipelines), so that their negative effects on woodland caribou, and other sensitive wildlife species, are reduced and eventually eliminated.

Background

Most woodland caribou herds in Alberta are declining, and research in the province has clearly shown that caribou respond negatively to linear developments. Woodland caribou were found to avoid areas adjacent to seismic lines and roads, which reduces the availability and effectiveness of habitat in caribou ranges. Caribou were also found to cross roads less frequently than expected, implying a barrier effect. Roads, pipelines and seismic lines enable humans to easily penetrate otherwise remote areas, which can lead to increased levels of hunting, poaching and trapping. Wolves, the main predator of caribou, seek out and travel faster along corridors than in adjacent habitat, and kill caribou near these lines.

The harmful effects of linear disturbances on wildlife have been widely documented. Ungulates, large and medium-sized carnivores, and birds have been shown to respond negatively to linear development at an individual and/or population level. Up to 85% of some woodland caribou ranges in Alberta are within 250 m of a linear disturbance. This fact highlights the need to restore natural habitat within the existing footprint of human activity on the landscape. Natural recovery of linear disturbances has been very slow in most caribou ranges. Actions taken to reduce access and encourage vegetative regrowth are needed and will benefit many other species, including grizzly bear and wolverine, both of which require large areas of relatively undisturbed habitat, and bull trout, which is sensitive to fragmentation of its habitat by watercourse crossings.

A wide range of industrial, government and nongovernmental groups have shown interest in the first three years of this project, and this interest continues to expand. This extensive broad-based support will ensure that sufficient human and financial resources are committed to the project to guarantee its successful completion.

Methods

A project committee as well as local planning teams were set up for each of four project areas. These teams met as required and guided the initial restoration activities, monitoring and research that took place.

Researched treatments (e.g., mounding, tree planting) were integrated into the planning stages to overcome the limiting factors in line reclamation, and experimental designs of new treatments were outlined for future study. An ongoing experiment with the University of Alberta to test the effectiveness of tree felling and snow fences on wolf mobility and access was implemented. An access control experiment using tree felling and rollback over different distances, with and without signage, was initiated within a 3D-seismic program site. An experiment was designed to test the use of mulching (mowing) as a low-impact clearing technique and to assess its potential as a site preparation aid to enhance tree establishment. A study designed to investigate growth of non-typical tree species and winter transplants on test plots in Stony Mountain was implemented. The effectiveness and cost efficiencies of planting frozen tree seedlings in the winter will be tested. Additional replicates of sites stocked with transplanted (in situ) trees and shrubs are planned for the fall of 2004. Studying the cost efficiencies of this technique, as opposed to planting tree plugs, is an important part of this research.

When choosing areas for restoration, local planning teams worked closely with key industrial players, Public Lands and Forests Division, Fish and Wildlife Division and local trappers. Consideration is currently being given to attaching consultative notations to areas that are being restored and protective notations to study plots, and outlining these areas on Fish and Wildlife Division referral maps. These steps will help to ensure that treated areas have the maximum potential for complete restoration, and will provide research results over an extended period of time.

Results

Red Earth

Transplants of black spruce, willow, rose and poplar, and planted black spruce and white spruce plugs took place over approximately 55 km of linear disturbance throughout the area.

Fort McMurray
Pine, black spruce, white spruce and poplar trees of various sizes were planted, reclaiming seismic lines and old winter access roads.

Little Smoky
Over 133 000 spruce seedlings have been planted along corridors, under a variety of site conditions. Three thousand alder seedlings were planted in spring 2004 to study their effect on soil conditioning on old, compacted lease roads. Tree felling and snow fences were used on over 44 lines to discourage human and predator access. Another line impediment study is currently in progress, in collaboration with the University of Alberta. That study is using telemetry point data and GPS collaring to assess the effectiveness of tree felling on wolf movements during the snow-free months.

Redrock/Prairie Creek
Linear disturbances were scouted and classified for restoration. Five kilometres of seismic lines were planted with pine in the spring of 2003. Another 24 000 seedlings were planted on a variety of different pipelines in the spring of 2004.

Recommendations/Future Direction

The project has laid out the groundwork to test various methods of site restoration and will further investigate the use of in situ transplants and planted frozen tree seedlings in the winter. In addition, the predator-use component of the project will continue to be examined and tested in conjunction with the University of Alberta. The effectiveness of tree felling as a deterrent to line use is currently being tested, and this study may be expanded to test the effectiveness that site preparation techniques such as mounding and slash rollback have on discouraging predators from using linear disturbances.

The next phase of the project will concentrate on communicating research results and ideas to all affected stakeholders, particularly industry. A report will be released at the end of the 2004/05 fiscal year, that will outline Best Practices that could be used during the construction and reclamation phases of oilfield development. This report will include a series of recommendations, as well as projected costs of implementation. In addition, a separate report on research results will be completed.

COOPERATING AGENCIES

Alberta Conservation Association, Alberta Newsprint Company, Alberta Sustainable Resource Development, Alberta Research Council, Baytex Energy, Boreal Caribou Committee, Burlington Resources Canada, Canadian Association of Petroleum Producers, CanFor, ConocoPhillips Canada Resources Corporation, Canadian Forest Oils, Canadian Natural Resources Ltd., Devon Energy, Duke Energy, EnCana Corporation, Government of Canada Habitat Stewardship Program, Husky Energy, Petro-Canada, Suncor Energy Inc., Talisman Energy Inc., Tempest Energy, Trans-Canada Pipelines, University of Alberta, West Central Alberta Petroleum Producers Group

For more information contact:

Matt Besko *(see page 7).*

INVENTORY OF TINY CRYPTANTHE IN ALBERTA

Project Supervisor: **Robin Gutsell, Sue Peters** (ACA)

purpose To conduct a provincial inventory to obtain current population data for tiny cryptanthe, a vascular plant listed as *Endangered* in Canada.

REGION:
Provincial (conducted in Southeast)

TARGET SPECIES:
Tiny Cryptanthe (*Cryptantha minima*)

***WILDLIFE ACT* CATEGORY:**
None

PROVINCIAL GENERAL STATUS:
In Preparation

Background

Tiny cryptanthe is a small (10-20 cm tall) annual flowering plant with diminutive tube-shaped flowers up to 3 mm long and 2 mm wide, in inflorescences (bracteate cymes). In Canada, tiny cryptanthe is known only from the lower South Saskatchewan River basin in southeastern Alberta and southwestern Saskatchewan, on dry eroded soils. The species was first designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as *Endangered* in April 1998. Its status was reassessed and confirmed in May 2000 (COSEWIC 2004), and tiny cryptanthe is now listed as an *Endangered* species under the federal *Species at Risk Act*. This designation is based on very small population size and occurrence in disturbed areas.

Species that have been listed by COSEWIC as *Threatened* or *Endangered* are high priorities for status assessment at the provincial level. A provincial inventory of tiny cryptanthe will allow for a detailed status assessment of the species in Alberta.

Methods

The provincial inventory was conducted between 30 July and 13 August, 2003. Topographic maps were used to delineate the survey area, which included locations of previously known occurrences and new areas likely to have comparable habitat characteristics. Landholders were contacted for permission to access potential occurrence sites. A total of 20 locations were searched, with one or more sites of appropriate habitat at each general location. Sites of previously reported occurrences were visited first to determine if 2003 growing conditions were favourable for tiny cryptanthe germination and growth (this was affirmed), and to note habitat characteristics for targeting new areas for the survey.

The top priority of the inventory was to estimate the range of tiny cryptanthe in Alberta by recording the location of any occurrence of the species. Area of coverage and size of the local population were estimated for most tiny cryptanthe occurrences encountered. Additional information collected included photographs, elevation, UTM coordinates, legal description, phenology, site description (plant community, associated species, substrate, aspect, slope, moisture), ownership, land use and habitat threats/management concerns. All observations were submitted for entry into the database of the Alberta Natural Heritage Information Centre. Information from other surveys completed in Alberta and adjacent jurisdictions was gathered.

Results

A total of 12 occurrences of tiny cryptanthe was documented in the 2003 survey, all found in the South Saskatchewan River basin. Fifteen occurrences of tiny cryptanthe in Alberta have been documented to date. Two of five previously documented occurrences were relocated in 2003. No plants were found at the other three previously known sites; however, only one or two individuals were previously recorded at two of these sites. The third site where tiny cryptanthe was not relocated (lower Bow River sand dunes) was the only previously documented occurrence outside of the South Saskatchewan River basin. The population at this site appears to fluctuate from year to year: 0 plants were found in 2001; 62 plants were found in 2002; and 0 plants were found in 2003.

Population estimates at three of the locations censused in 2003 yielded considerable plant numbers of about 17 000 (0.07 plants/m^2), 11 500 (0.24 plants/m^2), and 7500 (0.03 plants/m^2), along different stretches of the lower river basin. All plants were located on broad terraces of the river valley bottom, along a meander lobe of the river, on silty-sandy, xeric substrate. Population sizes at the other nine locations ranged from one to 555 plants.

Recommendations/Future Direction

Sufficient current population data are now available to complete a report on the detailed status of this species in Alberta. Information from other sources in the province and adjacent jurisdictions will be collected and considered in the report. Completion of the status report is expected in 2004. Once it is complete, the Endangered Species Conservation Committee and its Scientific Subcommittee will use the information provided in the status report to evaluate the provincial status of tiny cryptanthe. Populations should continue to be monitored at known occurrence locations, including those at which no plants were found during the 2003 survey. Searches for additional populations may be necessary. Potential threats should be identified and monitored.

COOPERATING AGENCIES

Alberta Conservation Association, Alberta Natural Heritage Information Centre

For more information contact:

Robin Gutsell *(see page 7).*

tiny cryptanthe

INVENTORY AND MONITORING OF NATURALLY OCCURRING WESTERN BLUE FLAG IN ALBERTA - 2003 PROGRESS REPORT

Project Supervisor: **Paul Jones** (ACA), **Richard Quinlan**
Project Technician: **Kathryn Romanchuk**

REGION:
Provincial (conducted in Southeast)

TARGET SPECIES:
Western Blue Flag (*Iris missouriensis*)

***WILDLIFE ACT* CATEGORY:**
In preparation
(*ESCC Recommendation: Threatened*)

PROVINCIAL GENERAL STATUS:
In Preparation

purpose

To coordinate with landowners to inventory newly reported stands of western blue flag, to monitor the species at previously known sites, and to provide a revised population estimate of naturally occurring western blue flag in Alberta.

Background

Alberta contains the only known population of western blue flag in Canada. It occurs in a small area (300 km^2) in southwestern Alberta near Cardston, and was recently reported at two additional sites, one in Calgary and one in Fort Macleod. Western blue flag is listed as a *Threatened* species under the federal *Species at Risk Act*, and in September 2001 it was approved for listing as *Threatened* under Alberta's *Wildlife Act*. Subsequently, a team composed of landowners, conservation groups and resource managers was assembled to prepare the provincial recovery plan for western blue flag. In April 2002, Alberta's Minister of Sustainable Resource Development approved the *Maintenance and Recovery Plan for Western Blue Flag (*Iris missouriensis*) in Canada* as the provincial recovery plan for the species. Major objectives of the plan included the development of an ongoing inventory and monitoring program for western blue flag and providing updated information on the blue flag population based on information regarding new sites. Inventories in 2000 and 2001 identified 11 sites with naturally occurring western blue flag, with a population estimate of 14 757 stems. In 2002 an inventory and monitoring protocol was designed and initiated, and four additional landowners agreed to participate in the Western Blue Flag Conservation Program. The stem count estimate following the 2002 inventory increased to 69 200 stems. As part of the ongoing inventory and monitoring program, all of the western blue flag sites monitored in 2002 were monitored during June 2003.

Methods

In June 2003, data were collected from each monitoring plot established in 2002 and a complete inventory of the three designated "small" sites was carried out (refer to Species at Risk Report No. 66 for detailed information on the inventory and monitoring protocol). The primary data collected included the total number of stems and the number of fruiting or flowering stems. As well, changes in plant vigour and other factors affecting western blue flag were noted, including changes in associated species. In addition to the Cardston area sites, one newly recorded site located at the Calgary International Airport was inventoried for the first time in July 2003 and four plots were established on the site for long-term monitoring.

Results

Inventory and monitoring plot data from 2003 revealed an overall increase in the number of total stems and flowering/fruiting stems from 2002, although some individual sites showed marginal decreases. In 2002 the western blue flag population was estimated as approximately 69 000 stems from 13 of 16 known sites. In 2003, new site stem totals as well as increases at previously inventoried sites raised the total stem count to approximately 73 000 stems from 15 out of a total of 18 sites.

In 2003, western blue flag was reported at two new sites, one in Calgary and one in Fort Macleod. This discovery may be considered significant since both sites are located outside the species' previously known range. A preliminary examination of the site located outside of Fort Macleod indicated a small population of approximately 200 stems.

The amount of spring and early summer precipitation received in 2003 was substantially below that of 2002. Precipitation from the previous season as well as precipitation from the current season may determine the vigour of western blue flag stands, especially on sites where marginal habitat conditions exist. Long-term monitoring may help reveal how seasonal moisture trends impact the vigour of western blue flag populations.

Recommendations/Future Direction

Results from 2002 and 2003 indicate that the monitoring protocol appears to be an effective method of determining changes in the size of the western blue flag population. However, sites must be monitored over several years, with environmental conditions taken into consideration, before trends can be fully understood. Annual inventories should continue at the Whiskey Gap and Police Outpost Provincial Park sites (sites with fewer than 500 stems), and the plots established at all other sites should be monitored on an annual basis. If a site's count is down by more than 10% from the previous year's count, a total stem count should be completed.

The Scientific Subcommittee of the Endangered Species Conservation Committee will re-evaluate the provincial status of western blue flag during the spring of 2005, based on the new inventory information received regarding the increased numbers of sites and stems. Even if the current *Threatened* status is not upheld in light of the updated information, continuing to conserve western blue flag habitat through the voluntary cooperation of landowners should remain paramount in order to maintain this species.

COOPERATING AGENCIES

Alberta Conservation Association, Government of Canada Habitat Stewardship Program, Police Outpost Provincial Park, landowners in the Cardston area

For more information contact:

Richard Quinlan (*see page 7*), and see Species at Risk Report No. 85, Western Blue Flag Conservation Program: 3-Year Summary Report.

This report is available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

western blue flag

INVENTORY OF WESTERN SPIDERWORT IN ALBERTA, 2003

Project Supervisors: **Joel Nicholson, Sue Peters** (ACA)

purpose

To confirm the persistence of western spiderwort in the one location where it is known to occur in Alberta and to search other potentially suitable habitats for new records of this species in order to support the development of a provincial recovery plan.

REGION:
Provincial (conducted in Southeast)

TARGET SPECIES:
Western Spiderwort
(*Tradescantia occidentalis*)

***WILDLIFE ACT* CATEGORY:**
In preparation
(*ESCC Recommendation: Endangered*)

PROVINCIAL GENERAL STATUS:
In preparation

Background

Western spiderwort is a perennial flowering plant with a slender stem and linear leaves. Its unusual name comes from the soft, stringy material that can be pulled from the broken ends of the stem. After exposure to air, this material hardens into a cobweb-like thread.

In September 2001, the Minister of Sustainable Resource Development approved the listing of western spiderwort as *Endangered* in Alberta. The status designation of *Endangered* reflects concerns over the following: the species' small population in Alberta, which is isolated from populations in the United States and Saskatchewan; its fluctuating population size; and the decreasing availability of its sand dune habitat. These concerns, combined with the threat of invasion by leafy spurge (*Euphorbia esula*) into western spiderwort habitat in other parts of Canada, led to its listing as *Threatened* in Canada in 1992. This designation was confirmed in 2002 and the species is now listed under the federal *Species at Risk Act*.

In Alberta, western spiderwort is known to occur in only one area in the southeastern corner of the province. The small population has been monitored sporadically since 1986. The size of the spiderwort population in this area varies from year to year depending on moisture levels, making a population trend difficult to determine. This 2003 project was an extension of the western spiderwort inventory that was conducted in the summer of 2002.

Methods

Inventories were conducted from 1-9 July, 2003. Searches were initially conducted at the Pakowki Lake North Sandhills, where plants had been recorded in 2002, and then at seven additional locations with suitable habitat.

Detailed information including the number of stems, reproductive status and evidence of browsing was collected on a large portion of the population in 2002, so only four small, discrete patches of plants were recounted in 2003 for comparative purposes. The remaining patches of plants were simply relocated and their size estimated. In addition, a search for new plants was conducted. A "plant" was defined as a clump of multi-stemmed shoots. The boundaries delineating each continuous patch of western spiderwort plants were recorded using a Global Positioning System unit, so that the approximate area of each patch could be determined.

Results

In 2003, the presence of western spiderwort was confirmed only at the known site, where the total Alberta population was estimated to be at least 7700 plants (7450 in 2002). All but one very small patch of plants identified in 2002 were again located in 2003. Seven new small patches of plants were found, ranging in estimated size between 15 and 50 plants; however, it is quite possible that these plants were present in 2002 but were overlooked. Both the 2002 and 2003 population estimates for western spiderwort represent significant increases over any other previous estimate.

The total area encompassing all patches of Alberta's western spiderwort plants and the area between them is 2.2 km^2. Despite the large number of plants found, they are considered to be part of a single population. During both the 2002 and 2003 inventory, spiderwort plants were found growing in partially stabilized and stabilized sand dunes (often on south-facing slopes), as well as around and among small shrubs.

In 2003, an average of 96% of plants were reproductive (i.e., flowers present), an indication of good seed production and future population potential. Browsing was patchy, ranging from 0 to 37% (average 16%) of plants in the four patches that were enumerated. Heavy browsing in some patches may have resulted in an underestimation of the number of plants.

No western spiderwort plants were found at any of the other seven locations surveyed in 2003. These other locations were of variable sandy habitat types, all of which differed to some degree from the known location.

No immediate threats to Alberta's western spiderwort population were evident during the 2003 inventory. Although grazing by cattle did not appear to inhibit the growth of the population as a whole, some patches of plants may have been negatively affected by grazing. Leafy spurge invasion, which is a concern in spiderwort habitat in other jurisdictions, was not noted in 2003. Nonetheless, because Alberta's spiderwort population is known only from a 2.2-km^2 area, local land-use decisions could have a significant impact on the population.

Recommendations/Future Direction

In 1997, Alberta's *Wildlife Act* was amended to allow designation and recovery of *Threatened* and *Endangered* plants. The data collected during the 2002 and 2003 western spiderwort inventories have provided valuable information for the western spiderwort recovery process, which was initiated in the fall of 2003.

Development of the recovery plan for western spiderwort is in progress, and it sets the goals, objectives, strategies and actions needed to guide the management of western spiderwort over the next five years. The Endangered Species Conservation Committee has recommended to the Minister of Sustainable Resource Development that initial recovery efforts for this species focus on the identification and conservation of the existing population, rather than the creation of new populations. The possibility of applying an appropriate protective notation to the known site should be investigated, and the question of how to optimize the local grazing management (i.e., timing, duration and intensity) for the long-term sustainability of the spiderwort population should be explored. As well, a long-term monitoring program should be established, which should consist of periodic (every 3-5 years) formal inventory of the population including both favorable and poor (dry) years. This program would further establish population fluctuations and trends, and check for leafy spurge invasion. Additional searches for spiderwort in potential habitat in southern Alberta should also be encouraged.

COOPERATING AGENCIES

Alberta Conservation Association, Alberta Natural Heritage Information Centre, Alberta Sport, Recreation, Parks and Wildlife Foundation, Alberta Sustainable Resource Development—Public Lands and Forests Division

For more information contact:

Joel Nicholson (*see page 7*) and see the 2003 addendum to Species At Risk Report No. 61, Inventory of western spiderwort (*Tradescantia occidentalis*) in Alberta: 2002.

The report and the 2003 addendum are available at: http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html

western spiderwort

LETHBRIDGE PRAIRIE RATTLESNAKE CONSERVATION PROJECT

Project Supervisors: **Richard Quinlan, Randy Lee** (ACA)

purpose

To maintain a Lethbridge population of the prairie rattlesnake at a sustainable level through public education and by providing secure hibernacula and foraging areas for rattlesnakes in the city.

REGION:
Southeast

TARGET SPECIES:
Prairie Rattlesnake (*Crotalus viridis viridis*)

***WILDLIFE ACT* CATEGORY:**
Non-game Animal
(*ESCC Recommendation: Data Deficient*)

PROVINCIAL GENERAL STATUS:
May Be At Risk

Background

The coulees of southwestern Lethbridge are home to a small population of prairie rattlesnakes. High rates of mortality from road kills, persecution and loss of habitat make the future of rattlesnakes in Lethbridge uncertain. In 2000, a committee was formed which developed a management plan with the participation of the public. The Lethbridge Rattlesnake Conservation Project was initiated in 2001 to implement conservation strategies outlined in the plan. Efforts in 2001 were concentrated on relocating "problem" rattlesnakes to Cottonwood Park where long-term survival seemed most likely. Since that time, efforts have focused on the following: public education to reduce human/snake conflicts; the removal of problem and vulnerable rattlesnakes to appropriate habitat away from urban development; and maintaining the participation and cooperation of all interested groups and citizens.

Methods

The public education component of the project was carried out through production and distribution of brochures, poster displays, and tours of the artificial hibernaculum. A survey of park users was undertaken to gauge public attitudes toward the program, interviews with the media were done, and a website was developed for the project.

In the summer of 2003, as in 2001 and 2002, all problem and vulnerable rattlesnakes were captured and maintained at the site of an artificial hibernaculum in Cottonwood Park until their release the following spring. Passive integrated transponder (PIT) tags were implanted in the captured rattlesnakes for long-term identification and monitoring. In an effort to reduce human/snake conflicts, a drift fence in Popson Park was established to capture and relocate snakes moving toward a residential area. Interpretive signs were installed in parks to provide information on preventing encounters with rattlesnakes. Requests for snake removals were responded to promptly.

Telemetry transmitters were attached externally, using two different transmitter types and application methods, to the rattles of selected rattlesnakes that hibernated at the site during winter 2002/2003, prior to their release in spring 2003. Rattlesnake dispersal, movements, and habitat use were subsequently monitored. The effectiveness of using externally attached transmitters for radio-tracking rattlesnakes is being evaluated.

Results

Information outlining rattlesnake conservation efforts was widely distributed to the public. According to the survey conducted in 2003, over 90% of park users (Popson and Cottonwood Parks) supported the Lethbridge Rattlesnake Conservation Project. Radio and television interviews were conducted, and discussions took place with citizens in areas near rattlesnake habitat and with park users.

During the summer of 2003, a total of 23 rattlesnakes was captured and moved to the Cottonwood Park hibernaculum and another moved to Popson Park. Sixteen of the snakes were removed from subdivisions, roads, and private property; seven were considered vulnerable and also relocated. No snakes were captured in the Popson Park drift fence. There were five reported road kills.

Three of the eight snakes released from the Cottonwood Park hibernaculum in spring 2003 returned to the enclosure in the fall. These results are similar to those of 2002. Dispersal and habitat use data were collected from radio transmitters of two rattlesnakes. The Holohil transmitters that were attached with 5-minute epoxy and tape to two adult snakes remained attached for at least 45 days.

Two clutches of neonates were born at the Cottonwood Park hibernaculum and at least two clutches were born at the two known hibernacula in Popson Park. A natural hibernaculum used by both garter snakes and rattlesnakes was discovered in Cottonwood Park in 2003. PIT tags in three of the six rattlesnakes observed at this den showed that these snakes had moved several hundred metres to this site from the artificial hibernaculum. At least five snakes that had been captured and maintained in the artificial hibernaculum in 2001 and released in spring 2002, but that were not observed at the hibernaculum in the fall of 2002, were located in the park in 2003. This suggests that they also had found alternate hibernating locations in the park.

Recommendations/Future Direction

Continued efforts to provide public education, respond quickly to calls for problem rattlesnake removal, and to maintain the participation and cooperation of all interested groups and citizens will be necessary for conserving a prairie rattlesnake population in Lethbridge. Relocation of problem and vulnerable rattlesnakes to the Cottonwood Park hibernaculum, and subsequent monitoring of marked, transmitter-equipped, and unmarked rattlesnakes, will provide helpful information for meeting the project goal.

The feasibility of developing a corridor between Cottonwood and Popson Parks should be investigated. If rattlesnakes relocated to Cottonwood Park show fidelity toward the artificial hibernaculum, consideration should be given to constructing a second unmarked hibernaculum in a part of the park that receives little human use. If the population of rattlesnakes in Cottonwood Park reaches a level where there is conflict with adjacent landowners, mitigation measures must be taken to minimize this conflict.

COOPERATING AGENCIES

Alberta Conservation Association, City of Lethbridge, Highlands Pet Hospital, Lethbridge Naturalists Society, Paradise Canyon Resort, Runner's Soul, Volker Stevin Contracting Ltd.

For more information contact:

Richard Quinlan (*see page 7*) and see Species at Risk Report No. 81, Lethbridge Rattlesnake Conservation Project: 2003 Progress Report.

This report is available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

prairie rattlesnake

THE STATUS OF ALBERTA WILDLIFE – DETAILED STATUS REPORTS

Project Supervisors: **Sue Peters** (ACA), **Nyree Sharp** (ACA), **Robin Gutsell**

purpose

To initiate new detailed status reports, and to post recently published reports on the Fish and Wildlife Division website.

Background

Every five years, the Fish and Wildlife Division reviews the status of wild species in Alberta. These assessments, which were conducted in 1991, 1996 and 2000, assign to individual species general status ranks that reflect the perceived level of risk to populations that occur in the province.

The Alberta Wildlife Status Report series builds on the general status exercise (*The Status of Alberta Wildlife* [Alberta Environmental Protection 1996], *The General Status of Alberta Wild Species 2000* [Alberta Sustainable Resource Development 2001]), and provides comprehensive summaries of the biological status of selected wildlife species in Alberta.

These detailed status reports profile all current, relevant and available information for a species in a single document. The reports provide important information to the Endangered Species Conservation Committee and its Scientific Subcommittee, and are a valuable tool for Fish and Wildlife Division staff. Information contained within these reports has not only aided management decisions, but has raised public awareness of the current status of Alberta's wildlife species. As of March 2004, a total of 52 detailed status reports had been published, including one 2003 update of an earlier report.

Methods

Qualified individuals were contracted to prepare the new reports. Before being printed, each report went through an extensive review process, including species experts from outside the Fish and Wildlife Division. In addition, the datasets that resulted from each report were entered into the Biodiversity/Species Observation Database (for vertebrates) or the Alberta Natural Heritage Information Centre database (for invertebrates and plant species).

Results

Four new reports were initiated in 2003-04: sage thrasher (*Oreoscoptes montanus*), Arctic grayling (*Thymallus arcticus*), barred owl (*Strix varia*) and tiny cryptanthe (*Cryptantha minima*). As well, one update report was initiated (short-horned lizard [*Phrynosoma hernandesi*]) and new population data were collected and added to the slender mouse-ear-cress (*Halimolobos virgata*) preliminary report to complete it. At the time of printing of this report, the sage thrasher, short-horned lizard and tiny cryptanthe detailed status report had been printed.

Four reports initiated in the previous fiscal year were printed in 2003-2004: St. Mary sculpin (provisionally *Cottus bairdi punctulatus*), stonecat (*Noturus flavus*), small-flowered sand-verbena (*Tripterocalyx micranthus*), and mountain plover (*Charadrius montanus*).

Recommendations/Future Direction

The following species are priorities for detailed status reports planned for 2004-05:

- Burrowing owl update (*Athene cunicularia*)
- Western blue flag update (*Iris missouriensis*)
- Weidemeyer's admiral (*Limenitis weidemeyerii*)
- Westslope cutthroat trout (*Oncorynchus clarkia lewisii*)
- Porsild's bryum (*Mielichhoferia macrocarpa*)

REGION:
Provincial

TARGET SPECIES:
At Risk/May Be At Risk/ Sensitive/Undetermined species

***WILDLIFE ACT* CATEGORY:**
Varied

PROVINCIAL GENERAL STATUS:
Varied

COOPERATING AGENCIES

Alberta Conservation Association

For more information contact:

Robin Gutsell (*see page 7*) or
Sue Peters (Sue.Peters@gov.ab.ca).

For copies of the status reports, contact: Information Centre 780.422.2079 or visit available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/index.html.

MULTISAR: THE MILK RIVER BASIN PROJECT – A MULTI-SPECIES CONSERVATION STRATEGY FOR SPECIES AT RISK IN THE MILK RIVER BASIN (YEAR TWO)

Project Supervisors: **Richard Quinlan, Paul Jones** (ACA)
Project Biologists/Technicians: **Brandy Downey, Brad Downey** (ACA)

REGION:
Southeast

TARGET SPECIES:
Approximately 40 species of management concern

***WILDLIFE ACT* CATEGORY:**
Endangered, Threatened and Non-game

PROVINCIAL GENERAL STATUS:
At Risk, May Be At Risk, Sensitive, Undetermined, and Secure

purpose To develop a process to manage multiple species at risk on a defined landscape.

Background

The Milk River Basin may contain the highest number of species at risk of any definable landscape in Alberta. This high number combined with the relatively small size of the drainage basin (6776 km^2), led to this landscape being selected for Alberta's first venture into multi-species management of species at risk.

Objectives

A number of specific objectives were identified:

- To summarize existing information for species at risk in the Milk River Basin.
- To identify data gaps and design inventories for those species for which data are lacking.
- To carry out inventories of species at risk for which data are lacking.
- To determine, through a species selection process, priority management species for the project.
- To identify habitat associations of selected management species, and describe these through Habitat Suitability Index (HSI) models.
- To produce a map of the drainage basin showing relative habitat suitability for each selected management species.
- To identify portions of the drainage basin which are highly important to individual and multiple species at risk (terrestrial and aquatic).
- To discern the natural landscape processes of importance in the Milk River Basin.
- To evaluate range management systems for their relative value in providing habitat for species at risk.
- To develop beneficial management practices for Milk River Basin species at risk.
- To provide specific conservation and stewardship recommendations for high priority areas of the Milk River Basin.
- To report results of the project to Milk River Basin communities and conservation groups with an interest in the Milk River Basin.
- To facilitate partnerships to achieve conservation of species at risk through voluntary stewardship actions.

General Overview of the Process

In April 2002, a scoping phase of the project was carried out to determine occurrence and distribution of species at risk (*At Risk*, *May Be At Risk*, *Sensitive*) within the Milk River Basin. This exercise was followed by a review to determine data gaps for both species and portions of the landscape. Wildlife surveys were developed and scheduled and inventories were completed in the spring and summer of 2002 and 2003. Results were used to better understand species' distribution and habitat associations. A species selection process was developed that resulted in the selection of 17 project management species, for which habitat models were prepared. Variables used to describe habitat were based on data available in electronic map bases. This led to creation of maps showing relative habitat values for the species throughout the basin. In 2003 these models were combined to produce a Multi-species Conservation Value (MCV), which prioritized the landscape for management initiatives.

The fisheries component of the project included completion of a Milk River fish inventory that had been initiated in 2001. In addition to this, a survey of tributaries was started in 2002 to determine areas of particular importance in providing drought refugia for fish and other aquatic species. These fish refugia will be mapped and identified as areas of high habitat value on the landscape.

While the inventory, modeling and mapping initiatives were underway, a review was also being carried out of natural processes on the landscape and current range management systems. A compilation of beneficial management practices (BMPs) for the project management species was initiated. The resulting increased understanding of species distribution and habitat associations, combined with improved knowledge of appropriate management, will allow for conservation and stewardship options to be initiated in year three of the project. These will be developed through partnerships between the project managers, local communities and conservation organizations, and will be based on cooperative voluntary approaches.

Results

Fisheries inventories included continuation of a Milk River fish species at risk survey (western silvery minnow, St. Mary sculpin, stonecat, sauger), and a fish refugia inventory (brassy minnow). There were also surveys conducted for amphibians (great plains toad, plains spadefoot, northern leopard frog), reptiles (prairie rattlesnake, bullsnake, western painted turtle, eastern short-horned lizard), mammals (Richardson's ground squirrel, small mammal surveys through owl pellets) and birds (raptors, ferruginous hawk, loggerhead shrike, long-billed curlew). Results are summarized in Species at Risk Reports No. 72 and No. 87, including information on range extensions for amphibian and fish species, raptor nesting habitat, and critical data on amphibian habitat associations.

Through a species selection process that recognized the importance of habitat structure, ecological tolerances, species' assemblages, keystone species, and affiliation with native habitats, a total of 17 project management species was selected for modeling. These species include seven birds, five mammals, two reptiles, two amphibians, and one invertebrate.

HSI models have been developed for all 17 project management species and are displayed in Species at Risk Report No. 86. The models' variables are based upon digital map databases available for the Milk River Basin. Although this presented a disadvantage in that some variables were not represented in digital map databases (e.g., individual trees for the ferruginous hawk model), it enabled the production of GIS maps showing categorized areas of suitability across the Milk River Basin. Where the information was available, historical data and sightings were used to modify the HSI models specifically to the Milk River Basin. These models were combined to produce the MCV, which indicated "Hot Spots" of species at risk activities in the Milk River Basin. Approximately four percent of the basin was ranked "High Priority"; all results are displayed in Species at Risk Report No. 87. Conservation initiatives will be focused in these areas.

Beneficial management practices (BMPs) were produced for six individual species and seven groups of species in the second year of the project. The BMPs profiled possible range management systems, and insight was provided into the relative effectiveness of these systems for each of the individual or groups of species. The BMPs will be combined with industrial guidelines for species at risk to provide appropriate management on MULTISAR stewardship lands.

Since its initiation, the MULTISAR project has moved from the research and planning phase to the implementation of conservation objectives directly on the landscape. Year three will concentrate on the first MULTISAR stewardship programs. These programs were selected based on the results of the MCV, wildlife inventories and landowner cooperation. Stewardship programs will involve species' inventories, wildlife habitat assessments, the BMPs and industrial guidelines to develop individual ranch conservation strategies.

Recommendations/Future Direction

1. Initiate the first cooperative MULTISAR stewardship program on 2.5 townships of high MCV land in the Milk River Basin. This will be done through the following process:
    - Completion of wildlife habitat assessments for MULTISAR stewardship lands, focusing on the type, relative availability and health of species at risk habitat types (e.g., riparian, badlands)
    - Initiation of a wildlife monitoring program for project management species on MULTSAR stewardship land.
    - Completion of a unique conservation management strategy based on the wildlife habitat assessments, wildlife monitoring program, the BMPs and industrial guidelines for species at risk.
    - Initiation of recommended improvements and the conservation phase of the stewardship program. The Alberta Conservation Association will oversee implementation of recommended improvements.
2. Obtain participation of several additional landowners for 2005 MULTISAR stewardship projects in high MCV areas of the Milk River Basin. This will be completed through the distribution of informative brochures and landowner visits.
3. Continue to assess the effectiveness of the MULTISAR stewardship program.
4. Fish and Wildlife Division inventories of species at risk for which data are lacking will continue in 2004-05.

COOPERATING AGENCIES

Alberta Conservation Association, Alberta Sustainable Resource Development—Public Lands and Forests Division, Government of Canada Habitat Stewardship Program, Resource Information Unit – Prairie Region, Writing-on-Stone Provincial Park

For more information contact:

Richard Quinlan (*see page 7*) and see Species at Risk Report No. 72, A multi-species conservation strategy for species at risk in the Milk River basin: year 1 progress report; Species at report No 86, MULTISAR: the Milk River Basin Project, habitat suitability models for selected wildlife management species; Species at Risk Report No. 87, MULTISAR: The Milk River Basin Project, A multi-species conservation strategy for species at risk: year 2 progress report.

These reports are available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

SOUTHERN HEADWATERS AT RISK PROJECT (SHARP)

Project Supervisors: **Richard Quinlan, Brad Taylor** (ACA)

REGION:
Southwestern Region

TARGET SPECIES:
Approximately 16 species of management concern

***WILDLIFE ACT* CATEGORY:**
Endangered, Threatened and Non-game

PROVINCIAL GENERAL STATUS:
At Risk, May Be At Risk, Sensitive, Undetermined, and Secure

purpose

To identify and prioritize species for management, map habitat potential, and produce management guidelines for landscape units of importance for Southern Headwaters At Risk Project (SHARP) species.

Background

The SHARP project area consists of the headwaters of the Oldman River Basin in southwestern Alberta. It includes portions of the Alpine, Subalpine, Montane, Foothills Parkland, Foothills Fescue, and Mixedgrass natural subregions. The SHARP area supports exceptional wildlife species diversity. Although there has been considerable management effort put toward game species in this area, little has been done to prioritize and actively manage non-game species and species at risk on the SHARP landscape. SHARP was developed for this purpose.

Objectives

SHARP objectives include:

- To summarize existing information for species at risk.
- To carry out inventories for species at risk for which data are lacking.
- To determine, through a species selection process, priority management species for the project.
- To identify habitat associations of selected management species, and describe these through Habitat Suitability Index (HSI) models.
- To produce a map of the drainage basin showing relative habitat suitability for each selected management species.
- To develop Landscape Management Units (LMUs) for multiple species at risk.
- To summarize natural landscape processes of importance in the mountains, foothills and grasslands of the SHARP project area.
- To develop beneficial management practices and land use guidelines for SHARP priority species.
- To provide specific conservation and stewardship recommendations for LMUs in the SHARP area.
- To provide a guiding document useful to landowners, land managers, industrial planners, and conservation organizations, to help achieve conservation of species at risk.

General Overview of the Process

The project commenced with a review and summary of natural processes of importance on the SHARP landscape, followed by a species selection process involving several biologists from various agencies. Inventories were carried out on amphibians and grassland birds to improve information on their distribution and habitat associations. A team of professionals was assembled including representatives from the Fish and Wildlife Division, Alberta Conservation Association, Parks Canada, consulting biologists, and a University of Lethbridge graduate student. This team developed habitat suitability models for 15 of the priority management species. Using digital map data obtained from the Sustainable Resource Development Resource Information Unit and the Public Lands and Forests Division, the primary consultant produced maps showing distribution of the habitat across the SHARP landscape. Compilation of beneficial management practices and land use guidelines will be completed for individual species and landscape management units. Information will be provided in a report to assist land management decisions by agencies, industry and conservation groups.

Results

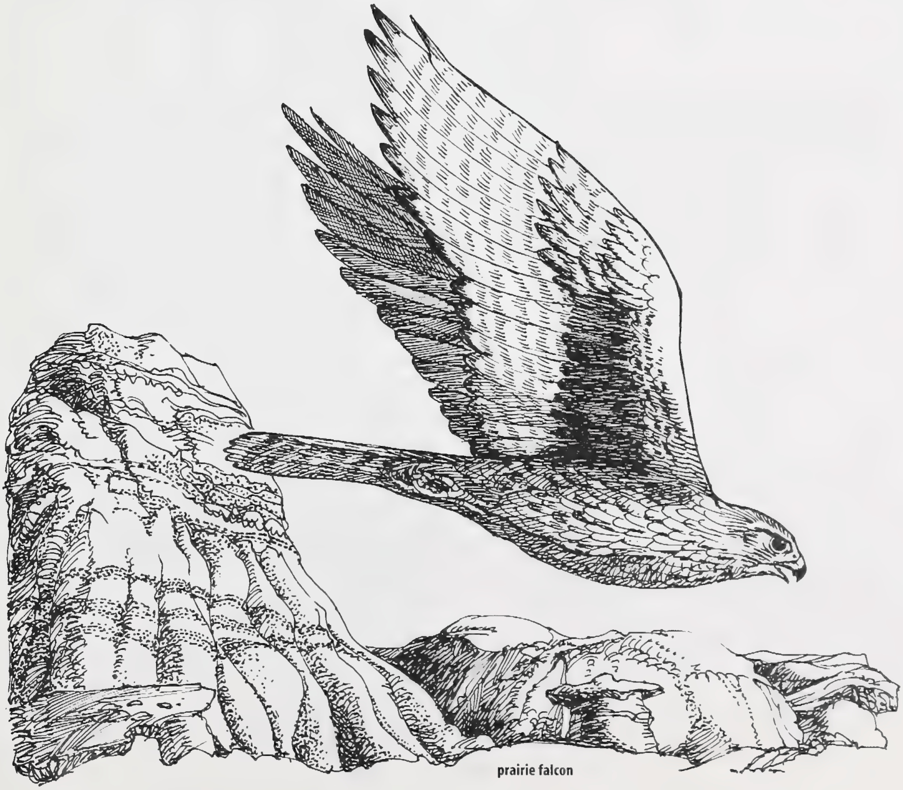
A report entitled *SHARP Introduction and Natural Processes* (Species at Risk Report No. 89) was produced, and included reviews of the significance of processes such as wind, flooding, erosion and sedimentation, drought, fire, grazing, avalanches, insect and disease outbreaks, and predator-prey interactions. The species selection process and habitat suitability models and maps for 15 of the species selected are described in Species at Risk Report No. 90. The selected species include the following: harlequin duck, ferruginous hawk, prairie falcon, sharp-tailed grouse, long-billed curlew, pileated woodpecker, Clark's nutcracker, Sprague's pipit, loggerhead shrike, vagrant shrew, grizzly bear, wolverine, long-toed salamander, western toad, northern leopard frog, and trumpeter swan.

Because of the high diversity of butterflies in the SHARP area, and possible threats to them, an authority on lepidopterans was contracted to carry out a conservation overview of butterflies in the project area (see Species at Risk No. 80). Amphibian surveys were conducted in the southern half of the project area, and a preliminary report was completed for inclusion in a 2005 Species at Risk report. Grassland bird surveys were completed in the foothills fescue and mixedgrass natural regions.

Several meetings were held between the SHARP project manager and the C5 Forest Management Planning team. These meetings led to the decision to adopt the SHARP project species that occur in forested land as C5 forest management plan species. The Habitat Suitability Index models and maps for these species (harlequin duck, pileated woodpecker, Clark's nutcracker, grizzly bear, wolverine, long-toed salamander, and western toad) have been provided to the forest planning team for landscape prioritization. This is the first example of SHARP influencing resource planning decisions.

Recommendations/Future Direction

1. In 2004-05 the amphibian survey in the northern half of the SHARP area will be completed and results will be documented in the Species at Risk report series.
2. In 2004-05 a field inventory will be carried out to determine occurrence locations and habitat associations of the priority butterfly species that were identified in Species at Risk Report No. 80. Conservation recommendations for SHARP butterflies will be included in this report.
3. In 2004-05 beneficial management practices will be developed for the 16 SHARP project species, and a review of existing land use guidelines will be carried out for suitability to the SHARP area. These guidelines, plus new information resulting from a review of pressures and threats on SHARP species and landscapes, will be used to develop land use guidelines for the SHARP project species.
4. Beneficial management practices and land use guidelines for the seven C5/SHARP species will be provided to the C5 Forest Planning team for use in developing the 10-year C5 Forest Management Plan.
5. Landscape management units will be developed and mapped for management of species at risk in the SHARP landscape; conservation and stewardship recommendations will be summarized for each landscape management unit.
6. A list of potential funding organizations will be included in the project report.



prairie falcon

COOPERATING AGENCIES

Alberta Conservation Association, Alberta Sustainable Resource Development—Public Lands and Forests Division, Alberta Sustainable Resource Development—Southeast Region Resource Information Unit, Anatum Consultants, Government of Canada Habitat Stewardship Program for Species at Risk, Waterton Lakes National Park

For more information contact:

Richard Quinlan (*see page 7*) and see Species at Risk Reports No. 80, 89, 90.

These reports are available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html.

HABITAT STEWARDSHIP PROGRAM FOR SPECIES AT RISK IN SPECIAL AREAS 2, 3 AND 4 OF SOUTHEASTERN ALBERTA (YEAR TWO)

Project Supervisor: **Arlen Todd**
Project Biologist: **Corey Skiftun**

purpose

To identify priority areas of native prairie and initiate habitat stewardship actions for species at risk in Special Areas 2, 3 and 4.

Background

Of the 24 million acres that make up the Grassland and Aspen Parkland Natural regions, only 43% remains as true native prairie. Of this 43%, 56% is under Crown ownership, though the majority receives some level of grazing management. Significant blocks of native prairie still remain in the Special Areas, at the scale of one to several townships in size. These blocks of native prairie are situated in a regional landscape where significant fragmentation of native prairie has occurred, resulting in declines of at risk species such as the ferruginous hawk and burrowing owl. Areas of remaining suitable habitat are important to locate for a variety of at-risk and sensitive species such as the ones featured here. In addition, many other relatively rare grassland species occur in the project area, and stewardship actions may help to prevent them from becoming at risk.

Methods

Species surveys were conducted for long-billed curlew, ferruginous hawk, and loggerhead shrike in the 2003-2004 field season. Further records of species of interest were collected from databases such as the Biodiversity/Species Observation Database (BSOD) and from native vegetation studies, breeding bird surveys and other sources. Species information was compiled and considered in conjunction with examination of aerial photos and field reconnaissance to complete a township-by-township landscape assessment, identifying priority townships for stewardship actions.

Results

The township-by-township landscape assessment was revised based on updated BSOD data. Of 234 townships analysed, only seven had insufficient information to prioritize and efforts are being made to fill this data gap. Within Special Areas 2, 3, and 4, the number of townships classified as high priority increased from six to nine after new data were incorporated, and the number of townships with no recorded species of interest decreased from 29 to 18.

Intensive landholder contacts were made in priority areas. Voluntary agreement was arranged with one landholder for involvement in the program during year three. Extensive liaison was completed with landholders on burrowing owl trend blocks, which culminated in completion of the burrowing owl survey on those blocks for the first time since 1998. Access had been denied in the intervening years because of a variety of stated concerns (see also "Burrowing Owl Survey and Monitoring, Hanna Area", page 15). Additional inventories for long-billed curlew and ferruginous hawk were also completed in data-deficient areas, in line with the finding in year one of the program that there was a lack of information on species at risk in much of the area. Public outreach and public relations were facilitated by participation in two town-hall meetings and numerous individual contacts with landholders.

Recommendations/Future Direction

Generalized range assessments of specific priority parcels will continue in year three (2004-2005), and range management plans will be developed for the parcel held by the landholder enrolled in the program for year three. An increase in the number and variety of wildlife surveys is planned for the upcoming year. These surveys will consider species including the ferruginous hawk, loggerhead shrike, amphibians, sharp-tailed grouse, long-billed curlew, Richardson's ground squirrel, Ord's kangaroo rat, and prairie rattlesnake hibernaculae. The upcoming season will also include the completion of a habitat strategy and baseline wildlife data on the newly participating ranch. More landowners will be visited in an attempt to include them in the Species Areas Habitat Stewardship Program. This is expected to be a multi-year project.

REGION:
Southeast

TARGET SPECIES:
Baird's Sparrow (*Ammodramus bairdii*), Burrowing Owl (*Athene cunicularia*), Ferruginous Hawk (*Buteo regalis*), Loggerhead Shrike (*Lanius ludovicianus*), Long-billed Curlew (*Numenius americanus*), Long-tailed Weasel (*Mustela frenata*), Northern Leopard Frog (*Rana pipiens*), Ord's Kangaroo Rat (*Dipodomys ordii*), Plains Spadefoot (*Spea bombifrons*), Piping Plover (*Charadrius melodus*), Short-eared Owl (*Asio flammeus*), Sprague's Pipit (*Anthus spragueii*), Upland Sandpiper (*Bartramia longicauda*)

***WILDLIFE ACT* CATEGORY:**

Endangered: Ord's Kangaroo Rat, Piping Plover

Threatened: Burrowing Owl, Ferruginous Hawk, Northern Leopard Frog

Non-game Animals: Baird's Sparrow, Loggerhead Shrike, Long-billed Curlew, Plains Spadefoot, Sprague's Pipit, Upland Sandpiper

Bird of Prey: Short-eared Owl

Fur-bearing Animal: Long-tailed Weasel

(*ESCC Recommendation—Special Concern: Loggerhead Shrike, Long-billed Curlew, Sprague's Pipit*)

PROVINCIAL GENERAL STATUS:

At Risk: Burrowing Owl, Ferruginous Hawk, Northern Leopard Frog, Piping Plover

May Be At Risk: Long-billed Curlew, Long-tailed Weasel, Ord's Kangaroo Rat, Plains Spadefoot, Short-eared Owl

Sensitive: Baird's Sparrow, Loggerhead Shrike, Sprague's Pipit, Upland Sandpiper

COOPERATING AGENCIES

Alberta Conservation Association, Government of Canada Habitat Stewardship Program, Special Areas Board

For more information contact:

Arlen Todd (*see page 7*) or **Corey Skiftun** (corey.skiftun@gov.ab.ca).

conservation management planning

SPECIES OF SPECIAL CONCERN CONSERVATION MANAGEMENT PLANNING

Targeted management and monitoring may be required for some species that are not *Endangered* or *Threatened*, but which have characteristics that may make them particularly sensitive to human activities or natural events. Following a detailed status evaluation by the Scientific Subcommittee and recommendation by the Endangered Species Conservation Committee (ESCC), these species can be designated as *Species of Special Concern* by the Minister of Sustainable Resource Development.

Conservation management plans for *Species of Special Concern* must be developed within five years of Ministerial approval of the provincial status recommendation. These management plans are intended to be a resource tool for the Fish and Wildlife Division (FWD) and for provincial and regional land management agencies. The plans are designed to provide guidance for species' management and influence land management decisions that will enhance the conservation of target species and their habitat.

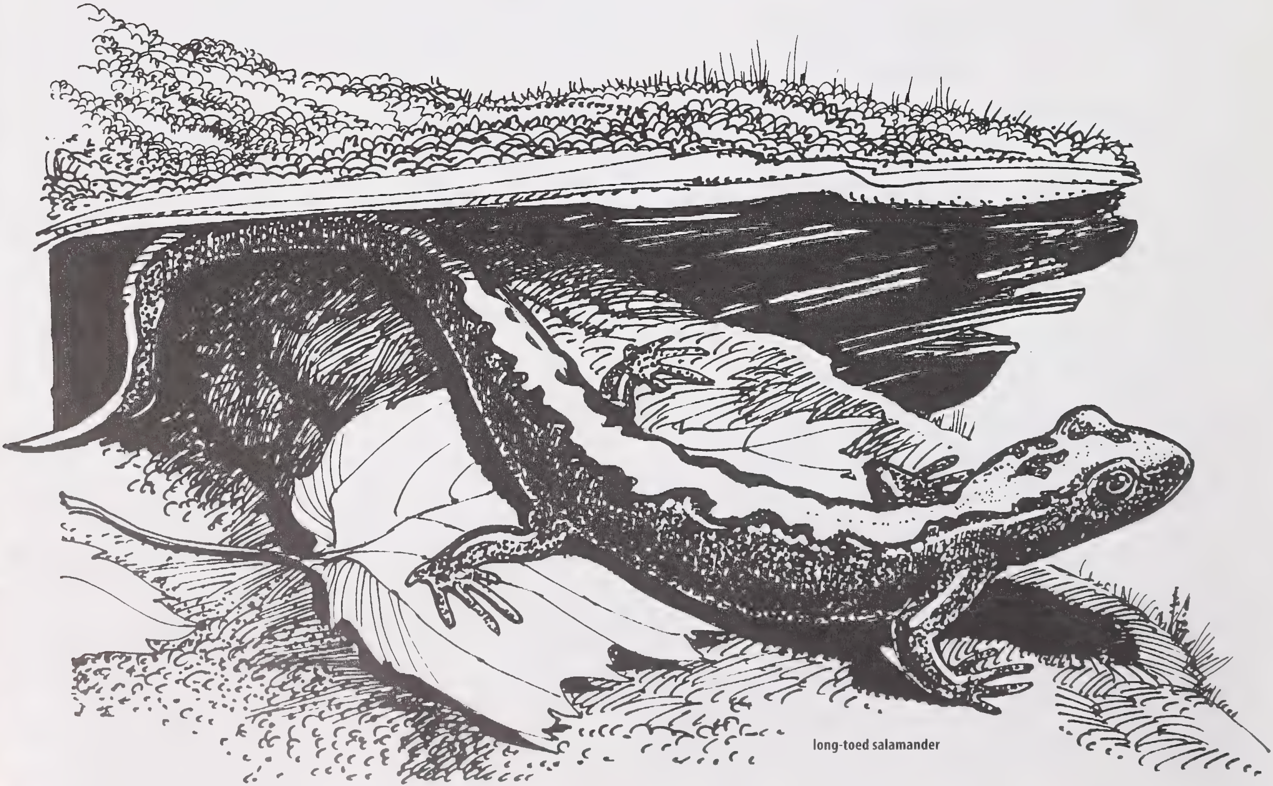
Management plans are intended to be concise documents, with a focus on recommendations and actions. Plans contain a brief overview of background information including rationale for the species' listing, threats to populations and habitat, and a summary of inventory efforts. A goal(s), objectives and recommended actions are identified as per the recovery planning process. Actions can encompass the following: inventory and monitoring needs; habitat protection and conservation; management activities; and other considerations, such as public education initiatives.

If applicable, management plans can also identify current government policies, guidelines and practices that could be improved to minimize impacts on species' population or habitat. Such plans must be accompanied by recommendations for processes to review and revise existing policies and guidelines, or develop new ones that will ensure the long-term maintenance of a species and its habitat.

Draft plans are prepared by a FWD staff lead and circulated for technical and peer review to species experts and forestry, public lands and FWD staff. Where appropriate, plans are distributed to stakeholders for review. Final drafts of the management plans are submitted to the Director of Wildlife Management (Director) for review and approval. The Director may circulate the plans to other directors as appropriate. Management plans are not regulatory in nature, and as such, ministerial approval is not required. Upon approval by the Director, plans will be available to partners, the public, and other relevant agencies, and will be posted on the departmental website. Finalized plans will also be presented to the ESCC.

Management plans are dynamic documents that will be amended as conditions require. They will be subject to a brief, annual review by FWD personnel and updated accordingly. An in-depth review will occur within five years of completion of an initial plan.

To date, draft conservation management plans have been developed for three *Species of Special Concern* – Sprague's pipit, long-toed salamander and long-billed curlew – and for one *Data Deficient* species, the prairie rattlesnake.



long-toed salamander

recovery planning

A small number of native species have been identified as being at risk of extinction or extirpation in Alberta. These species are designated as *Endangered* or *Threatened* under the provincial *Wildlife Act*, and are the focus of recovery planning and implementation programs. Establishing recovery programs for at-risk species reflects Alberta's commitment to the *Accord for the Protection of Species at Risk*, the *National Framework for the Conservation of Species at Risk*, and requirements established under Alberta's *Wildlife Act* and the federal *Species at Risk Act* (SARA).

The Alberta recovery program has the following overarching GOAL:

To maintain or restore species identified as *Threatened* or *Endangered* to viable, naturally self-sustaining levels within Alberta.

At the direction of the Minister of Sustainable Resource Development, the Director of Wildlife Management, Fish and Wildlife Division (the Director), establishes a provincial recovery team for each *Threatened* and *Endangered* species. Recovery teams are composed of interested or affected stakeholders, which may include conservation organizations, industry, landowners, resource users, aboriginal organizations, academia, government agencies and others. The Fish and Wildlife Division is the coordinating agency and identifies a lead staff member for the team, provides operational support for the team, and ensures ongoing integration with other national or jurisdictional recovery programs. The team reports to the Minister through the Director, who acts as the Minister's representative.

The team produces a draft provincial recovery plan within one year for *Endangered* and two years for *Threatened* species. All plans include background information that highlights the species' biology, population trends, and threats to the species and its habitat; a recovery section that identifies recovery goals and measurable objectives; strategies that address threats and guide recovery actions; and an action plan. The action plan outlines specific actions necessary to achieve the recovery goals; associated timelines for initiation or completion of those actions; and organizations that will be involved with implementation. Recovery plans for species that are also listed federally are developed to meet requirements under SARA.

Once a draft recovery plan is completed, it is submitted to the Director, who forwards it to the Endangered Species Conservation Committee (ESCC) and the department for review. During the departmental review the Deputy Minister may consult other departments on the content of the draft recovery plan. Departmental comments, and recommendations from the ESCC on approval of the plan, are forwarded to the Minister. Plans accepted and approved for implementation by the Minister are published as part of the recovery plan report series. Following approval, the Team Leader and the Fish and Wildlife Division, with direction from the Minister, determine an appropriate format and venue for a public review of the recovery plan.

It is anticipated that agencies and organizations represented on the recovery team, and identified in the action plan, will be involved with the implementation of recovery actions. However, depending on species-specific circumstances, it may be necessary to initiate recovery actions while the recovery planning process is still in progress.

The Fish and Wildlife Division and the recovery team provide ongoing coordination and assessment of recovery implementation. Recovery plans are "living" documents and the team may revise the action plan as conditions change or circumstances warrant. The team reports annually to the Director on recovery progress and on any changes made to the action plan. Recovery plans are assigned a lifespan (typically 5 years), and are revised and updated by the team at the end of that period.

During 2003-04, recovery planning continued for burrowing owl, woodland caribou, grizzly bear, greater sage-grouse and peregrine falcon (see table, next page). Five recovery teams were initiated during the same period, and include three that have a single-species focus: trumpeter swan, Ord's kangaroo rat, and western spiderwort. The two other teams initiated in 2003-04 have followed a multi-species recovery planning approach, targeting soapweed and yucca moth, and three Milk River fish species (western silvery minnow, St. Mary sculpin and stonecat). Substantial progress continued to be made on implementation of recovery plans for western blue flag and piping plover.

Table 1. Recovery planning and implementation progress, 2003-2004

Species	Status	Contact[1]	Team Initiated	Comments
Piping Plover	Endangered	Dave Prescott	July 2001	plan approved, year 2 of implementation
Western Blue Flag	Threatened	Richard Quinlan	November 2001	plan approved, year 2 of implementation
Peregrine Falcon	Threatened	Gord Court	May 2001	recovery planning in progress[2]
Woodland Caribou	Threatened	Dave Hervieux	October 2002	recovery planning in progress[2]
Burrowing Owl	Threatened	Arlen Todd	June 2001	recovery planning in progress[2]
Grizzly Bear	Threatened	Lisa Wilkinson	October 2002	recovery planning in progress[2]
Greater Sage-grouse	Endangered	Dale Eslinger	January 2003	recovery planning in progress
Ord's Kangaroo Rat	Endangered	Arlen Todd	April 2003	recovery planning in progress[2]
Trumpeter Swan	Threatened	Mark Heckbert	April 2003	recovery planning in progress
Swift Fox	Endangered	Joel Nicholson	June 2003	recovery planning in progress
Soapweed and Yucca Moth	Endangered	Joel Nicholson	October 2003	recovery planning in progress
Western Spiderwort	Endangered	Joel Nicholson	October 2003	recovery planning in progress
Milk River Fish[3]	Threatened	Terry Clayton	March 2004	recovery planning in progress

[1] See page 7 for contact information or e-mail to firstname.lastname@gov.ab.ca

[2] These plans have been submitted to Sustainable Resource Development for review. The Alberta Peregrine Falcon Recovery Plan was approved in September 2004. At the time of preparing this report, the recovery plans for woodland caribou, grizzly bear, burrowing owl and Ord's kangaroo rat were still under review.

[3] Western Silvery Minnow, St. Mary Sculpin, Stonecat

Ord's kangaroo rat

PIPING PLOVER RECOVERY IMPLEMENTATION, YEAR TWO

Recovery Team Leader: **Dave Prescott**

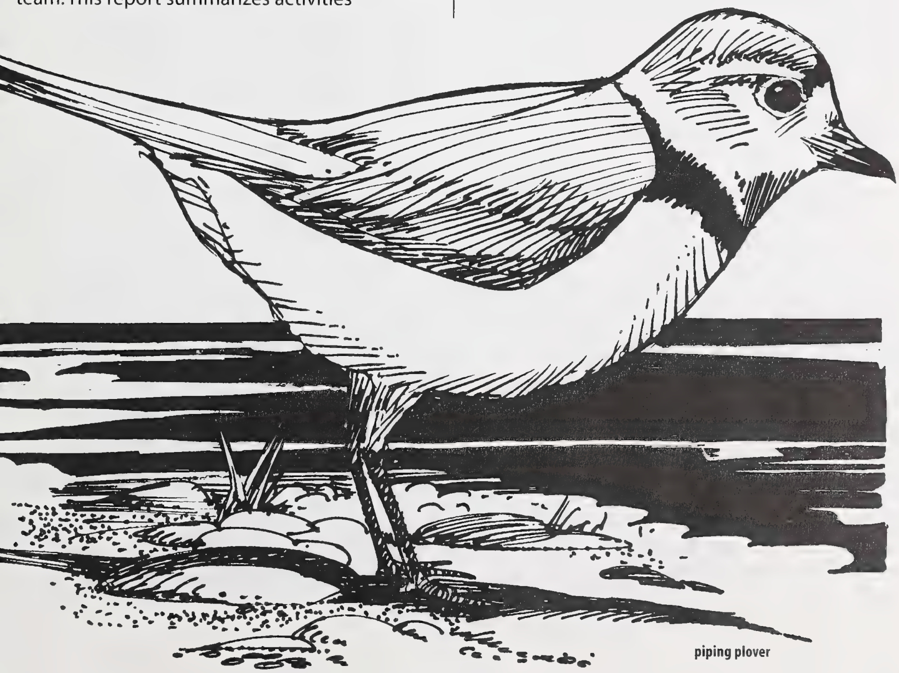
Background and Activities

The piping plover (*Charadrius melodus*) is an *Endangered* species in Alberta, and in most other jurisdictions in North America where it occurs. In 2000, the Minister of Sustainable Resource Development (SRD) formed a 10-member provincial recovery team, with representation from SRD (Fish and Wildlife, and Public Lands and Forests divisions), Canadian Wildlife Service, Alberta Conservation Association, Alberta Beef Producers, Ducks Unlimited Canada, Special Areas Board and Nature Conservancy Canada. In April 2002 the Minister approved the *Alberta Piping Plover Recovery Plan 2002-2004*.

The plan sets three goals: 1) a well-distributed population of 300 breeding adults in the province; 2) reproductive success of at least 1.25 chicks per pair annually; and 3) no net loss of breeding habitat. These goals will be achieved through the protection of habitat and nests in Alberta in accordance with guiding principles established by the recovery team. This report summarizes activities completed to achieve these goals in the second year of plan implementation (2003-04).

Plan Management and Administration

- Implementation was coordinated from the Fish and Wildlife Division (FWD) office in Red Deer. Staff from the FWD and the Alberta Conservation Association (ACA) in Edmonton and Red Deer coordinated much of the summer field program and stewardship activities.
- Staff were hired to lead stewardship activities out of Red Deer, with support from the ACA and Environment Canada (Habitat Stewardship Program).
- Summer field staff were trained and supervised by the ACA.
- Plover data were entered into several key databases, including the Biodiversity/Species Observation Database.
- The Alberta Piping Plover Recovery Team had two meetings: on 23 April 2003 (conference call), and on 30 March 2004.



piping plover

- There was representation from the Alberta Piping Plover Recovery Team at the annual Prairie Piping Plover Recovery Team meeting in Regina.

Habitat Management and Protection

- Concise management plans were completed for five key piping plover lakes in the province. In total, 30 plans have now been completed. These plans form the basis of subsequent management actions on each lake.
- Staff from the FWD, ACA, Ducks Unlimited Canada and Nature Conservancy of Canada personally visited at least 36 different landowners on 17 lakes to discuss plover management opportunities.
- Personal visits were made to 69 cottage owners on Muriel Lake and 6-8 owners on West Reflex Lake to determine their knowledge of piping plovers, and to seek their input on potential management and access restrictions on their lakes. As with a similar survey in 2002-03, results were overwhelmingly positive.
- Establishment of a seasonal sanctuary to protect plover breeding habitat on Muriel Lake was approved by the Minister of Sustainable Resource Development.
- Five agreements were signed with landowners or other groups to initiate specific on-the-ground recovery activities:
  - Fencing on the south side of Birch Lake
  - Fencing on the north side of Handhills Lake
  - Fencing and managed grazing on the north shore of Little Fish Lake (agreement with multiple landowners)
  - Fencing on the southwest portion of Handhills Lake
  - Fencing and off-site watering on the west side of Handhills Lake
- Verbal management agreements were established for interpretive signage on Little Fish Lake, and fencing on the south side of Handhills Lake.
- Input into industrial developments was provided at Hansman and Red Deer lakes.

Productivity Enhancement

- Seventy-one nests on 16 lakes were protected with predator exclosures, which resulted in 93% hatching success. This approximately doubles the nest success that has been documented for unmanaged nests over the past decade in Alberta.
- A comprehensive review of techniques for managing predator populations was published (Species at Risk No. 84).
- The annual removal of stick nests to reduce the incidence of nesting by predatory birds (primarily crows, magpies and merlins) near key piping plover nesting beaches was undertaken during the nonbreeding season on West Reflex and Killarney lakes.

Information and Education

- Interpretive signage was developed for four provincial parks: Little Fish Lake, Dilberry Lake, Miquelon Lake and Gooseberry Lake. Interpretive signage was also erected at the new wildlife sanctuary at Muriel Lake. Signs alerting beach users to sensitive nesting habitat were erected on a number of key lakes.
- Presentations focusing in whole or in part on piping plover management issues were given to a variety of groups: Boy Scouts of Canada, Girl Guides of Canada, Inglewood Bird Sanctuary, Red Deer River Naturalists, Kerry Wood Nature Centre, Buffalo Lake Watershed Group, Canadian Association of Geophysical Contractors, Sustainable Resource Development Executives, Junior Forest Wardens, Canadian Association of Petroleum Producers, Prairie Piping Plover Recovery Team, Alberta Piping Plover Recovery Team.
- Newspaper articles on plovers and their management appeared in the Edmonton Journal, the Western Producer, and in local newspapers in Provost, Viking, Red Deer, Camrose and Vermilion.
- Two presentations were delivered at the Northern Great Plains Piping Plover Science Workshop in Regina.

Research

- Complete surveys of breeding plovers were conducted on 33 lakes. A total of 152 birds was found on 23 lakes, which represents the first provincial population increase since 1996. A total of 81 nests was found. Brood surveys were conducted on 16 lakes. At least 104 chicks were estimated to have reached the age of fledging (18+ days).
- A total of 101 young birds was banded. Thirty-four previously banded birds were encountered during the year (originally banded in Alberta, Saskatchewan or Texas), and at least 11 Alberta-banded birds were sighted on the wintering grounds in Texas.
- Analysis of 10 years of nesting and management data was completed. Key results include quantification of the benefits

of predator exclosures (especially the new, smaller design), high annual and inter-lake variation in nest and fledging success, and achievement of productivity goals (1.25 chicks/pair/year) in the first two years of Recovery Plan implementation. This productivity goal was achieved in only one of the previous eight years of monitoring in Alberta.

Funding

- Numerous funding applications resulted in approximately $148 500 being raised from the FWD, ACA, Environment Canada (Habitat Stewardship Program and the Canadian Wildlife Service), Endangered Species Recovery Fund, TD Friends of the Environment Foundation and Alberta Human Resources and Employment - Summer Temporary Employment Program.
- Substantial in-kind contributions from Alberta Community Development, ACA, Ducks Unlimited Canada, Public Lands and Forests Division, private landowners and lessees, and other partners added significant resources to recovery efforts in 2003-04.
- Fundraising has been successfully completed for 2004-05.

Looking Ahead

All tasks scheduled for completion in the second year of implementation were accomplished. Work in 2003-04 also laid the foundation for several new habitat management projects to be initiated in 2004-05. The activities detailed in the *Alberta Piping Plover Recovery Plan, 2002-2004* for the third year of implementation remain essentially unchanged. Some key activities for the upcoming year will be the following:

- Broadening participation in recovery efforts through field training, presentations and landowner contacts.
- Expanding the funding base to include new partners.
- Implementing activities outlined in the 30 completed Lake Management Plans.
- Maintaining the predator exclosure program on as many lakes as resources allow.
- Preparing a new five-year Recovery Plan that will be compliant with the federal *Species at Risk Act*.

Acknowledgements

The Alberta Piping Plover Recovery Team gratefully acknowledges all individuals and agencies that funded (see "Funding" above) or actively participated in piping plover work during the past year. The team particularly values the cooperation of the numerous landowners who partnered in efforts to protect piping plovers and their breeding habitat, or allowed access to their land for monitoring activities. Their continuing stewardship is vital to the recovery of the piping plover and other species at risk in Alberta.

For more information contact:

Dave Prescott (*see page 7*). Several reports and the provincial recovery plan are available at: http://www3.gov.ab.ca/srd/fw/speciesatrisk/index.html.

WESTERN BLUE FLAG MAINTENANCE AND RECOVERY IMPLEMENTATION, YEAR TWO

Recovery Team Leader: **Richard Quinlan**

Background and Activities

Recovery planning for western blue flag (*Iris missouriensis*) began in 2001 following its approval to be listed as a *Threatened* species under Alberta's *Wildlife Act*. A 12-member multi-stakeholder group formed the provincial recovery team, and a maintenance and recovery plan for western blue flag was developed in late 2001/early 2002. In April 2002 the plan was approved. The long-term goal of the recovery plan is the maintenance of a sustainable population of this species in Canada. The shorter-term objective is to determine suitable management recommendations for western blue flag and to implement them at the individual ranch level.

The Western Blue Flag Conservation Program is one of the components of the action plan outlined in the *Maintenance and Recovery Plan for Western Blue Flag (*Iris missouriensis*) in Canada*. The program is a cooperative and voluntary conservation initiative that encourages range/habitat management to ensure the long-term maintenance of the naturally occurring populations of western blue flag in Canada in a sustainable ranching environment. As such, emphasis is placed on stewardship activities and an ongoing monitoring plan. In 2002, a total of five landowners and one land manager with western blue flag on their property had taken advantage of the Western Blue Flag Conservation Program. In 2003, two new landowners joined the program. Three additional landowners have been contacted, however, none of them have chosen to participate to date.

Western Blue Flag Inventory and Monitoring

An inventory and monitoring protocol for western blue flag was designed and initiated in 2002 and repeated in 2003 (see Species at Risk Report No. 66). The 2002 total stem count estimate was approximately 69 000 stems from 13 of 16 known sites, with all sites located in a 300-km^2 area south of Cardston. In 2003, in addition to the Cardston area sites, western blue flag was newly reported at two sites, one in Calgary and one in Fort Macleod. Currently, the Canadian portion of the western blue flag population is estimated as approximately 73 000 stems from 18 known sites. A summary of the 2003 inventory of western blue flag is contained in the publication titled *Western Blue Flag Conservation Program: 3-Year Summary Report* (Species at Risk Report No. 85). Monitoring will continue in 2004.

Stewardship Activities

- Range management plans have been completed for all eight participating landowners/land managers, and management recommendations have been implemented by six of the eight participants. Partner funding for ranch improvements that enhance management of western blue flag and prairie conservation will be arranged for the two newest landowners through the Western Blue Flag Conservation Program in spring 2004.
- As part of the program monitoring component of the conservation program, five land managers completed questionnaires. The questionnaires were designed to help evaluate the effectiveness of the cooperative voluntary nature of the program (as opposed to the use of legal agreements), and to evaluate the newly implemented management recommendations and their overall effectiveness. As another means of determining the correlation between certain management practices and trends in range condition, two landowners were provided with grazing record forms to document stock rotations and stocking rates.

Looking Ahead

- The Fish and Wildlife Division will continue to encourage Environment Canada to endorse the *Maintenance and Recovery of Western Blue Flag (*Iris missouriensis*) in Canada* as the National Recovery Plan for the species. Amendments to the plan will require the Western Blue Flag Maintenance and Recovery Team to reconvene.
- Inventory and monitoring activities identified in the recovery plan should continue in 2004.

For more information contact:

Richard Quinlan (*see page 7*), and Species at Risk Report No. 85, Western blue flag conservation program: 3-year summary report.

This report, several additional reports and the provincial recovery plan are available at http://www3.gov.ab.ca/srd/fw/speciesatrisk/index.html.

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Canadian toad

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Alberta Sustainable Resource Development—Fish and Wildlife Division
http://www3.gov.ab.ca/srd/fw/

Alberta Species at Risk Program
http://www3.gov.ab.ca/srd/fw/speciesatrisk/

Alberta Conservation Association (ACA)
http://www.ab-conservation.com/

Alberta Endangered Species Conservation Committee (ESCC)
http://www3.gov.ab.ca/srd/fw/escc/

Alberta Natural Heritage Information Centre (ANHIC)
http://www.cd.gov.ab.ca/preserving/parks/anhic/

Map of the Natural Regions and Subregions of Alberta
http://www.cd.gov.ab.ca/preserving/parks/anhic/natural_regions_map.asp

Wild Species: General status of species in Canada
http://www.wildspecies.ca/

Committee on the Status of Endangered Wildlife In Canada (COSEWIC)
http://www.cosewic.gc.ca/

Recovery of Nationally Endangered Wildlife (RENEW)
http://www.speciesatrisk.gc.ca/recovery/default_e.cfm

Species at Risk Act Public Registry
http://www.sararegistry.gc.ca/default_e.cfm

Accord for the Protection of Species at Risk in Canada
http://www.ec.gc.ca/press/wild_b_e.htm

The World Conservation Union (IUCN) Red List Categories
http://www.redlist.org/info/categories_criteria.html

2004 IUCN Red List of Threatened Species
http://www.redlist.org/

First report of the Alberta Endangered Species Conservation Committee: June 2000
http://www3.gov.ab.ca/srd/fw/escc/pdf_1.html

Second report of the Alberta Endangered Species Conservation Committee: June 2002
http://www3.gov.ab.ca/srd/fw/escc/index.html

The general status of Alberta wild species 2000
http://www3.gov.ab.ca/srd/fw/speciesatrisk/general.html

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http://www3.gov.ab.ca/srd/fw/speciesatrisk/pdf/2000-01SAR.pdf

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Alberta species at risk program and projects 2002-2003
http://www3.gov.ab.ca/srd/fw/speciesatrisk/pdf/2002_2003SAR.pdf

Alberta species at risk reports
http://www3.gov.ab.ca/srd/fw/speciesatrisk/reports.html

definition of status ranks

Status of Alberta Wild Species Ranks (after *The General Status of Alberta Wild Species 2000 [Alberta Sustainable Resource Development 2001]*)

2000 Rank	1996 Rank	Definitions
At Risk	Red	Any species known to be at risk after formal detailed status assessment and designation as Endangered or Threatened in Alberta.
May Be At Risk	Blue	Any species that may be at risk of extinction or extirpation, and is therefore a candidate for detailed risk assessment.
Sensitive	Yellow	Any species that is not at risk of extinction or extirpation but may require special attention or protection to prevent it from becoming at risk.
Secure	Green	A species that is not at risk, may be at risk or sensitive.
Undetermined	Status Undetermined	Any species for which insufficient information, knowledge or data is available to reliably evaluate its general status.
Not Assessed	n/a	Any species whose general status has not been evaluated.
Exotic/Alien	n/a	Any species that has been introduced as a result of human activities.
Extirpated/Extinct	n/a	Any species no longer thought to be present in Alberta (extirpated) or no longer believed to be present anywhere in the world (extinct).
Accidental/Vagrant	n/a	Any species occurring infrequently and unpredictably in Alberta; i.e., outside its usual range.

Alberta Species at Risk Formal Status Definitions[1]

Extinct	A species that no longer exists.
Extirpated	A species no longer existing in the wild in Alberta but occurring elsewhere in the wild.
Endangered[2]	A species facing imminent extirpation or extinction.
Threatened[2]	A species likely to become endangered if limiting factors are not reversed.
Species of Special Concern	A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
Data Deficient	A species for which there is insufficient scientific information to support status designation.

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[1] These definitions are based on those used by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

[2] *Endangered* and *Threatened* are legal designations under Alberta's *Wildlife Act*.

Other *Wildlife Act* categories referred to in this report include:

Non-game Animal	A wildlife species, as identified in the Wildlife Regulation, for which there is no hunting season. It is also illegal to possess or traffic in these species, unless permitted to do so.
Non-licence Animal	A wildlife species, as identified in the Wildlife Regulation, which can be hunted year round without a licence except in specified areas.

Committee on the Status of Endangered Wildlife in Canada

(after http://www.cosewic.gc.ca/eng/sct0/Assessment_process_tbl6_e.cfm)

Extinct	A species that no longer exists.
Extirpated	A species no longer existing in the wild in Canada, but occuring elsewhere.
Endangered	A species facing imminent extirpation or extinction.
Threatened	A species likely to become endangered if limiting factors are not reversed.
Special Concern	A species that is particularly sensitive to human activities or natural events but is not an endangered or threatened species.
Not at Risk	A species that has been evaluated and found to be not at risk.
Data Deficient	A species for which there is inadequate information to make direct, or indirect, assessment of its risk of extinction.

index by target species/topic

a

admiral, Weidemeyer's | 37

b

bryum, Porsild's | 37

c

caribou, woodland | 25, 27
conservation management planning | 43
cryptanthe, tiny | 29, 37

d

detailed status reports | 37

f

falcon, peregrine | 21
flag, western blue | 31, 37, 50
frog, northern leopard | 10, 12

g

grayling, Arctic | 37
grebe, eared | 22
grebe, western | 22

l

lizard, short-horned | 37

m

molluscs, aquatic | 23
mouse-ear-cress, slender | 37
MULTISAR - Milk River Basin Project | 38

o

owl, barred | 37
owl, burrowing | 15, 37

p

plover, mountain | 37
plover, piping | 47

r

RANA | 14
rattlesnake, prairie | 35
recovery implementation | 47
recovery planning | 45

s

sage-grouse, greater | 16, 18
salamander, long-toed | 9
sand-verbena, small-flowered | 37
sculpin, St. Mary | 37
Southern Headwaters at Risk Project | 40
shrike, loggerhead | 19
Special Areas Habitat Stewardship Program | 42
spiderwort, western | 33
stonecat | 37

t

thrasher, sage | 37
trout, westslope cutthroat | 37

list of titles in this series

No. 1 | **Alberta species at risk program and projects 2000-2001, by Alberta Sustainable Resource Development, Fish and Wildlife Division. (2001)**

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Alberta Species at Risk

PROGRAM AND PROJECTS

2003-2004

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